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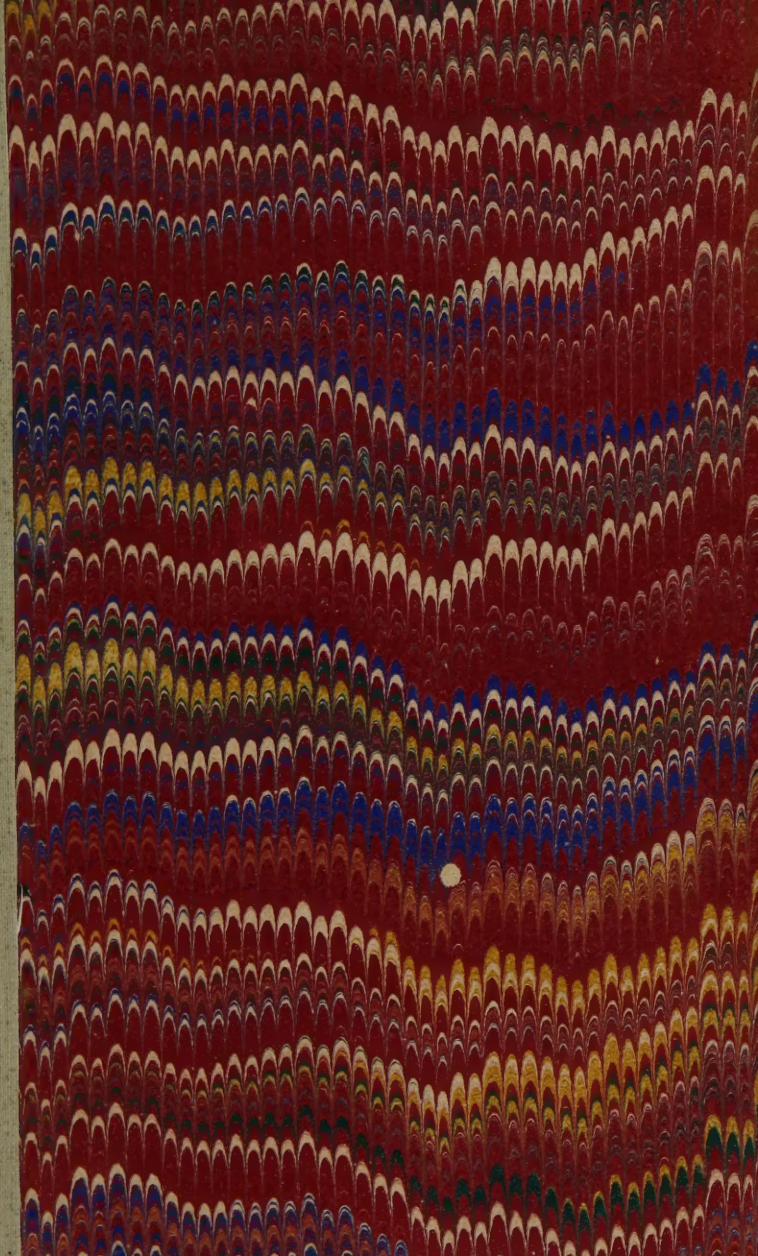
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DISEASES PECULIAR TO WOMEN.

CLINICAL LECTURES

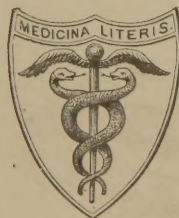
BY

✓
LOMBE ATTHILL, M.D.,

CONSULTING OBSTETRIC SURGEON TO THE ADELAIDE HOSPITAL, EX-PRESIDENT OF
THE DUBLIN OBSTETRICAL SOCIETY, ETC.

FIFTH EDITION,

REVISED AND PARTLY RE-WRITTEN, WITH ILLUSTRATIONS.



PHILADELPHIA:
P. BLAKISTON, SON & CO.,
1012 WALNUT STREET.

1882.

PREFACE TO THE FIFTH EDITION.



IN issuing a Fifth Edition of my Lectures I have only to repeat that I have endeavored to furnish to Practitioners and Students, “within the limits of a moderate-sized volume, such an account of the Diseases Peculiar to Women, verified by my personal experience, as would meet their wants.” The size of the present volume is not, therefore, materially enlarged. My reasons for deciding on this course will be found in the Preface to the last Edition, which is annexed.

The whole Work has, however, been carefully revised, and the chapter of Chronic Endometritis for the most part rewritten ; while some omissions which existed in the former Editions have been rectified.

LOMBE ATTHILL.

ROTUNDA HOSPITAL, DUBLIN,
July, 1878.



PREFACE TO THE FOURTH EDITION.

AFTER much consideration I have decided on presenting this Edition of my Lectures to the profession in an unaltered form. A large edition has gone out of print in less than a year and a half, and while gratified, as every author must be, at such a result, I am deeply impressed with the responsibility thereby entailed.

It is impossible that a fourth edition of any Medical work can be reached without its influencing to a considerable extent the management of the diseases of which it treats, and the author should weigh well not alone the views and statements he puts forward, but also the omissions he makes.

These Lectures have been characterized by a reviewer in the *Edinburgh Medical Journal* as “a very imperfect compendium of the diseases of women.” This charge would have some truth in it had the volume been put forward as a complete treatise on gynæcology. Such it did not profess to be, but still it affords to students and practitioners information on all “the Diseases Peculiar to Women” which fairly come within the limits of a work on these subjects. The criticism is not, however, devoid of weight, and I

have been urged, by "enlarging the scope" of this volume, at once to render for the future such a criticism impossible, enhance my reputation as an author, and add to the value of the work.

After much hesitation, I have decided against following the advice thus in good faith tendered.

By "enlarging the scope" of the work is meant the discussing *in extenso* not alone the pathology and treatment of uterine and ovarian disease, but also the describing in detail all the numerous operations now falling within the province of the obstetric surgeon, including ovariectomy and that for the cure of vesico-vaginal fistula. The task would not, indeed, be a very serious one, for my difficulty has been, while omitting all that was superfluous, to convey in language as clear and concise as possible all that seemed to me to be essential for my purpose. But while admitting the force of the first two reasons, I much doubt if by "enlarging the scope" of the volume I would add to its usefulness.

The object I had in view, in which I am gratified by feeling I have in some degree succeeded, was not to supply practitioners and students with information already within their reach, in recognized manuals of surgery, but to furnish them, in the limits of a moderate-sized volume, with such an account of the Diseases Peculiar to Women, brought up to the standard of the most recent period, and verified by my personal experience, as would meet their wants, and tend to the more general diffusion of a knowledge of these common, but, unfortunately, much-neglected affections.

I have endeavored, however, in the present Edition, to render the volume more worthy of the favorable reception accorded to it by a careful revision, and by the addition in many places of new matter, suggested by the experience obtained in the great field of observation afforded me in this Hospital.

LOMBE ATTHILL.

ROTUNDA HOSPITAL, DUBLIN,
November, 1876.

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CLINICAL LECTURES

ON

DISEASES PECULIAR TO WOMEN.

LECTURE I.

INTRODUCTORY REMARKS—MODE OF EXAMINING PATIENTS—USE OF SPECULUM—FERGUSSON'S—BIVALVE—DUCK-BILL—UTERINE SOUND—METHOD OF INTRODUCTION—INFORMATION TO BE OBTAINED FROM ITS USE—BIMANUAL METHOD OF EXAMINATION.

GENTLEMEN: It is of course essential to the right treatment of any disease, that the condition of the affected organ should be carefully and scientifically investigated. To assert such a palpable truth seems almost absurd; yet when coming together as we now do, to investigate the symptoms, and discuss the treatment, of the diseases of the female genital organs, it must be borne in mind, and I feel bound to impress upon you the importance of the simple proposition I have laid down. Not a year passes that I do not meet with instances in which practitioners lose credit and character by neglecting, or being unable skilfully, to make the examination necessary in the class of cases we are about to consider. What physician would dream of prescribing for a case of hæmoptysis without previously ascertaining the condition of the thoracic viscera? Yet many do not hesitate to

undertake the treatment of a case in which hæmorrhage from the uterus is present, without having the least idea whether the hæmorrhage depends on the existence of granular ulceration of the os and cervix uteri, on the presence of a polypus, of cancer, of that condition known as subinvolution of the uterus, or on some other less easily demonstrable causes. I therefore unhesitatingly lay it down as a rule, that in all cases presenting symptoms of uterine disease, a careful examination of the pelvic viscera should be made. But let me at the same time earnestly impress on you the duty of conducting such an examination in a mode as little irksome as possible to the patient, and with all possible delicacy.

Now, in nearly every case of uterine or vaginal disease, we require the aid of both touch and sight to enable us to arrive at a correct conclusion as to the condition of the affected organs. To use the speculum without a previous examination by the finger and hand, is not only wrong, but it also fails to convey to us anything like an accurate knowledge of the case. Thus a patient suffers from leucorrhœa, with pelvic pain, and pains in the thigh. You make an examination with the speculum, and finding the os uteri healthy, may hastily come to the conclusion that no abnormal condition of the genital organs exists, and perhaps assure the patient that the womb is healthy. But nevertheless she is dissatisfied, for her sufferings continue, and by-and-by she consults another practitioner, who detects the existence of a retro-flected or ante-flected uterus—a condition which an ocular inspection of the os uteri failed to recognize. I could easily multiply examples, but let this one suffice to impress you with the necessity of making a manual examination before using the speculum.

In speaking of a manual examination, I mean more than a digital examination of the vagina. I include also under

that term the investigation of the pelvic viscera through the abdominal walls, and, if the symptoms seem to demand it, through the rectum also. I shall make a few remarks on the mode of conducting these investigations.

First, then, as to the ordinary digital examination of the vagina and uterus. The patient is to be placed on her left side, with the head low and bent well forward, taking care, too, that she does not rest upon her elbow; the knees should be well drawn up, and the hips pushed out to the edge of the couch. These preliminaries effected, the index finger, previously well greased,* should be introduced slowly upwards, in the axis of the outlet of the pelvis, the tip of the finger being kept in contact with the posterior wall of the vagina. By adopting this course the finger reaches the posterior *cul de sac* of the vagina, and by carrying it from this point round the cervix uteri, we are enabled at once to ascertain the condition of the lower segment of the uterus. Thus we learn whether it be movable or fixed, whether it be of the normal size and shape, or, on the other hand, elongated or hypertrophied. Then, by drawing the finger down along its surface, you reach the os uteri and discover its state; whether it be patulous, with everted lips, or small and contracted. While thus engaged in investigating the condition of the uterus, you should not fail to attend to that of the vagina, and satisfy yourself whether it be of the natural temperature and moisture, or unduly hot and dry. But there is more yet to be ascertained before you have gained all the information possible for a digital examination,—the position of the uterus itself is to

* For this purpose a compound of purified soft soap, three parts; glycerin, one part, and carbolic acid, five grains to the ounce, answers admirably. It washes off easily, is a deodorizer and disinfectant, and does not damage clothes or any other article on which it falls as oil and grease do.

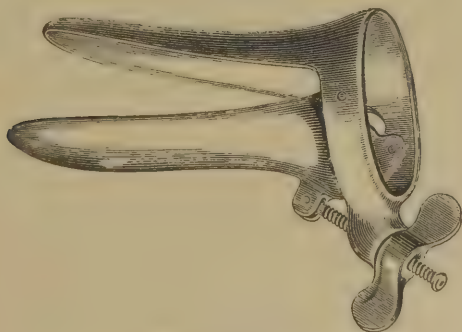
be made out, for the organ may be retroflected or antelected, or possibly under certain circumstances, completely retroverted.

As a rule, you should not be able to feel the body of the unimpregnated uterus through the posterior *cul de sac* of the vagina. If, therefore, on sweeping the finger round the cervix posteriorly, you feel a firm globular mass above, you can at once pronounce that the organ is in an abnormal condition. Then immediately follows the question which you are called upon to solve; namely, on what does this enlargement depend? But I must defer the consideration of this question to a future lecture; for a mere digital examination, though of importance, is frequently insufficient to enable us to decide this point; and in a large number of cases you must not remain content with it, or you will fall into grave errors. To make your examination complete, you must have recourse to the use both of the speculum and of the uterine sound. I name them in the order in which, as a rule, they should be used.

You see on the table three kinds of speculums. All of them are admirable instruments, and, as I am about to explain to you, each possesses some certain advantages which the other wants, and certain disadvantages which renders the use sometimes of one, and sometimes of another preferable. It is, therefore, essential that you should be acquainted with the respective merits of each. There are, no doubt, numerous other kinds; but for ordinary purposes these are sufficient, and for general use, I, without hesitation, recommend the one known as Fergusson's. It is, as you are aware, a glass cylinder silvered externally. This, again, is protected by a layer of gutta-percha, which answers the double purpose of affording a very smooth surface and serving as a protection to the vagina should the glass by any mischance crack or break. Through a full-sized one of these speculums you can see the parts very dis-

tinely ; it also possesses this great advantage, that it is uninjured by the action of acids, a class of remedial agents which are frequently used in the treatment of uterine disease. It is not, however, so easily introduced as either of the other speculums which I exhibit. If, therefore, the vagina be narrow, or if much inflammation be present, the attempt to use a full-sized one will give so much pain that you will have to desist, and should you, with the view of avoiding this, have recourse to a smaller one, you will find much difficulty in bringing the os into view ; even when you succeed in doing so, the portion of the cervix exposed to view will be of such limited extent as often to afford but little information. Still the number of cases in which it is inapplicable will be comparatively few. When, from the narrowness of the orifice of the vagina, or from the amount of inflammation present, you find Ferguson's speculum to be unsuitable, I recommend you to make use of a plated bivalve, such a one as this (Fig. 1).

FIG. 1.

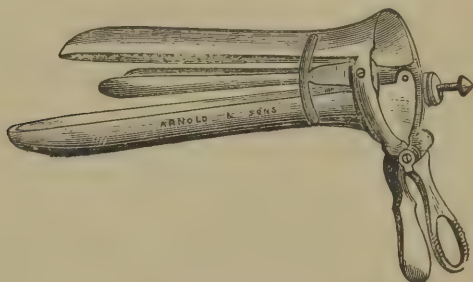


Bivalve Speculum.

It is very easily introduced, but does not reflect the light nearly so well as the glass one does, and moreover the lateral

fold of the vagina fall, to a considerable degree, into the space between the blades when they are expanded, and intercept your view. To remedy the latter objection, Dr. Graily Hew-

FIG. 2.



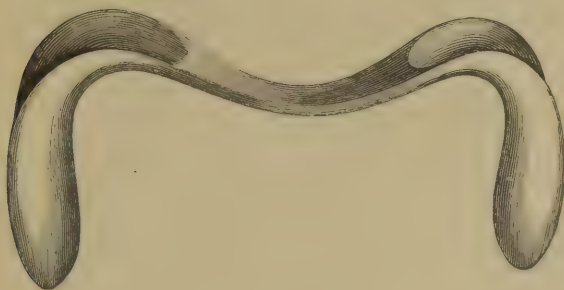
Four-bladed Speculum.

itt has introduced a four-bladed speculum (Fig. 2), which in several respects is superior to any other expanding speculum.

This speculum, which, from its shape, is known as the duck-bill speculum (Fig. 3), affords one advantage which neither of the others possess; namely, it permits you to see the os uteri, and at the same time to touch it—a matter of the greatest importance in many cases. We therefore use it when introducing sea-tangle or sponge tents into the cervix uteri; or when, having withdrawn these, we proceed to examine the condition of, or to make applications to, the canal of the cervix or body of the uterus, and also in the case of all operations about the vagina or uterus. Its disadvantages are that the forcible drawing back of the perinæum, which is necessary to permit the os uteri to be seen, causes pain; while if the instrument be not held very steady, the os slips out of view. Secondly, that it is absolutely necessary to have an assistant present to take charge of it; and thirdly, that difficulty is often expe-

rienced in keeping the anterior wall of the vagina from intercepting the view, unless, indeed, you seize the os with a hook or vulsellum—the reason for, and the mode of, doing which, I shall explain on a future occasion.

FIG. 3.



Duck-bill Speculum.

I shall now give a few directions as to the mode of introducing the speculum; for, if the instrument is used in a bungling, unhandy way, not only will the patient be caused much unnecessary pain, but you will also most likely leave an unfavorable impression on her mind as to your skill; I therefore feel that I am not wasting time in dwelling on these minutiae. First, then, you should dip your speculum into warm water to bring it up to the temperature of the body, and oil it; then the patient lying on the left side with her hips well out, you should, with the index and middle finger of the left hand, raise and draw up the right labium and nympha, while with the thumb and index finger of the right hand you hold the speculum, and bring its points to the orifice of the vagina. You should at the same time, with the middle finger of that hand, depress the soft parts on the left side; for if this be not done, and if the labia or nymphæ be turned in be-

fore the edge of the speculum, the patient will be caused much unnecessary pain which a little care would have obviated.

When once the point of the speculum has fairly entered within the vagina, its further introduction is a matter of no difficulty ; but still it is very possible for a person inexperienced in its use to fail in bringing the os uteri into view ; therefore, you should be careful to keep the point of the instrument pressed well back against the posterior wall of the vagina, for the os uteri should look downward and backward, so that by keeping the point of the instrument in the direction I have indicated, the os should without difficulty come into view. If this be not the case the speculum should be withdrawn a little way, and its direction slightly altered, when the desired object will most likely be attained. The foregoing directions hold equally good whether you use Fergusson's, or the expanding speculum ; for though the latter, on account of its shape, is introduced with greater facility, yet it is not easier with it to bring the os into view ; indeed the reverse is the case.

The duck-bill speculum requires special directions for its use. The following are those given by the inventor, Dr. Marion Sims, and should be carefully attended to whenever this speculum is used : " The thighs are flexed at right angles with the pelvis, the patient lying in a semi-prone position on her left side, her left hand being drawn backwards under her, and kept in that position ; the chest rotated forward, bringing the sternum very nearly in contact with the table or couch, the head resting on the parietal bone ; the head must not be flexed on the sternum nor the right shoulder elevated ; the patient is thus rolled over on the front, making a left lateral semi-prone position. The nurse or assistant at her back, pulls up the right side of the nates with the left hand, while the surgeon introduces the speculum, elevates the perinæum, and gives the

instrument into the hand of the assistant, who holds it firmly in the desired position." These directions are admirable, and should be strictly attended to.

When with either speculum you have exposed the os uteri you are able to judge of its state. You see first of all what may be the condition of the lips; if they are covered with healthy mucous membrane, and present the normal light mother-o'-pearl colored appearance, or whether they be congested, abraded, or in a state of granular ulceration, bleeding on the slightest touch; you see also whether the os be a small opening, free from discharge, or whether it be patulous, and plugged with a string of thick, glairy mucus, the sure indication of an unhealthy condition of the cervical canal. Then, while withdrawing your speculum, you have an opportunity of satisfying yourself as to the condition of the vaginal mucous membrane; thus by touch and sight you are enabled to pronounce with positive certainty as to the state of the os, of the lower segment of the cervix uteri, and of the vagina; but, should you stop here, you will in many cases have failed in your duty. Many a sufferer has been told, after having submitted to such an examination, that the womb was perfectly healthy, because the os and cervix appeared to be free from disease, and has consequently been looked upon as a complaining hypochondriac by her friends, while in reality she was a suffering invalid—the physician having failed to detect the actual ailment, either because he omitted to carry his investigation further, or because he was ignorant how to do so. For myself I lay down the following rule, which I advise you to pursue, in the investigation of all cases of uterine disease which come under your observation: 1st. To make a digital examination of the vagina and cervix uteri; 2d. If that fails in satisfying me as to the cause of the patient's suffering, then

to use the speculum ; and 3d. If still in doubt, to introduce the uterine sound, unless its use be clearly contraindicated.

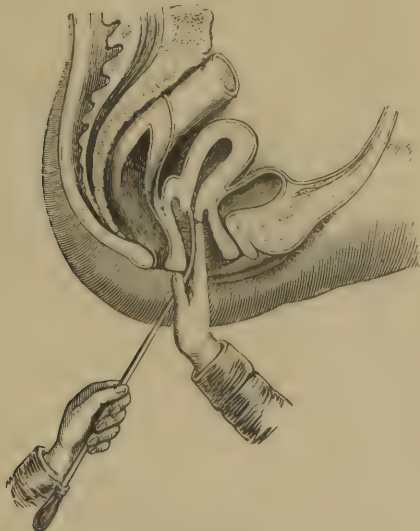
You are aware that the sound is an instrument of comparatively recent invention ; still it is surprising how little it is used, and how few appreciate its merits. I look on it as one of the most useful, and at the same time, if carefully and judiciously handled, safest of obstetric instruments. In my own practice I am indebted to it for most important information which could not have been obtained by any other means, and this too without having ever known it to produce the most trifling injury. Doubtless I am aware, that if roughly and unskilfully handled, or used in an improper case, the most serious consequences may follow its introduction ; but the same may be said of the catheter, or indeed of any other instrument requiring skill. I again repeat, that if carefully used and skilfully handled, it is a harmless instrument, and may be employed with perfect safety.

Before explaining the mode of introducing the sound, I wish to call your attention to the instrument itself. It is, as you see, a metallic staff, not unlike the sound used by surgeons for examining the bladder in the male. The best are made of copper, plated. The advantage which they possess is that you are able to bend them at pleasure ; a matter of no small importance, as you are frequently obliged to alter the curve when flexions of the uterus exist. At a distance of two and a quarter inches from the extremity of the instrument there is a little knob, which marks the depth to which it should usually penetrate into the uterine cavity, and at this point you observe the instrument is curved, so that it may pass in a direction corresponding with the axis of the uterine cavity. The entire length of the instrument is marked at intervals of an inch by notches, which enable you at once to decide to what depth the instrument has penetrated ; for when withdrawing it, if you

keep the point of your finger on the notch nearest to the os, you can with the aid of the figures marked on the handle, see at a glance what the depth of the uterine cavity may be.

It is not a matter of any great difficulty to introduce the sound into the cavity of the uterus; still it requires tact and

FIG. 4.



Mode of Introducing Sound.

practice, just as the use of the catheter does. The following directions will aid you in obtaining the requisite skill: Holding the sound in the left hand, I recommend you to introduce the index finger of the right into the vagina, and keeping its tip in close contact with the os uteri, guide the point of the sound up to the os, slipping it along the inner surface of the finger, the concavity of the instrument being turned towards the rectum (Fig. 4).

A little manipulation and gentle pressure will now make it enter the canal of the cervix. This being fairly accomplished, a fact you can always be sure of because your finger is still in contact with the os, you are to rotate the handle of the sound, a manoeuvre exactly similar to that practiced by surgeons when introducing the catheter in the male, and termed the "tour de maitre." This has the effect of changing the direction of the point of the instrument, which will now look upwards and forwards in the direction of the axis of the uterus; steady but very gentle pressure should now be made, and the point will, in general, pass on without difficulty till it reach the os internum; here some slight obstruction is met with. This, if it occurs, should be overcome by gentle continuous pressure; force must not on any account be used, lest injury be done to the uterine walls. As the point of the instrument passes through the os internum, the patient nearly always complains of pain and sometimes of nausea; but, as a rule, this subsides in a few minutes. When it is severe and lasts, as it sometimes does for some hours, metritis or endometritis will be found to exist, and I have on one or two occasions known a patient to feel faint; this feeling, too, soon passed off, and was never sufficient to prevent my finishing the examination; but it is well to tell your patient before you introduce the sound, that she may expect some pain, or at least a feeling of discomfort, similar to that experienced at the approach of a menstrual period.

In some instances an obstruction to the introduction of the instrument is met with low down in the cervical canal. This is not due to any contraction, but to the point of the sound becoming entangled in a fold of the mucous membrane, which in this portion of the intrauterine canal is not smooth but plaited. Should this occur, you must withdraw the point a little, and altering its direction somewhat, again press it on-

ward. This difficulty is more likely to occur when the os uteri is patulous, and the cervical canal relaxed from the effects of disease, than when it is in a healthy condition; but a little patience and careful manipulation will always overcome these obstructions. I have dwelt at some length on the mode of introducing the sound, because the difficulties of the operation have been much exaggerated, and I am satisfied that they are mainly due to want of skill on the part of the operator.

The method of using the sound which I have described is that which I always adopt; but there are other modes doubtless equally as good. Thus Dr. Graily Hewitt, following the plan recommended by Sir J. Simpson, introduces the index finger of the left hand, guiding the sound along it up to the os uteri; while Dr. West recommends introducing two fingers of that hand for the purpose, the instrument being held in the right hand. But whichever method you adopt, you will speedily with a little practice become adepts, only remember, never use force; better far that you should never use the instrument than that you should run the risk of injuring the uterus, and perhaps cause a fatal result, in doing by force what should only be accomplished by tact.

But you will frequently meet with cases in which the use of the sound is entirely forbidden. Thus, if there be any possibility of pregnancy existing, it would be most improper to introduce it, and wait until you are satisfied on this point. In cases of cancer, too, and as a rule, during an attack of any form of acute inflammation, your own judgment will warn you against it. But with such exceptions as these, I can confidently recommend the sound as a safe and useful instrument. So high is my opinion of the value of the information to be obtained by the judicious use of the uterine sound, that I make it a rule to introduce it in all doubtful cases, unless its use is contraindicated by the possible existence of pregnancy, or some equally

valid cause; and I am satisfied that this will at no distant time be recognized by all well-informed obstetric practitioners as the established rule.

Now as to the information to be obtained from its use. We learn three things which it would be impossible to ascertain by any other means. First, we determine with positive certainty what the depth of the cavity of the uterus is. If the sound pass beyond the nodule at the curve of the instrument, we know that the cavity is unduly elongated, and we can measure accurately the extent to which it is elongated. Secondly, we ascertain the position of the uterus, and determine whether it be in its normal position, or fixed anteriorly or posteriorly. Lastly, we learn whether the organ is fixed or movable, free or attached to any tumor, which we may detect exists in the pelvis. This is a matter of the greatest moment; for when we come to determine the all-important question as to the nature of some abdominal tumor, the sound, and the sound alone, enables us to decide whether the uterus is engaged in that tumor or not.

But our means of obtaining information are not yet exhausted. Our examination hitherto has been carried on through the vagina. We have ascertained what the condition of the os uteri is. We have measured the depth of the intra-uterine canal with our sound. We are satisfied that the uterus has retained its natural position, or is displaced. But we know nothing of the condition of the external or peritoneal surface of that organ. A fibrous tumor, for instance, of any conceivable size, may be developed from any portion of the uterine wall, and yet the examination I have hitherto described may fail to detect it. Never omit, then, in all doubtful cases, to pass the hand over the abdomen, and by the aid of both hands, to satisfy yourself as to the shape and size of the uterus. This method, termed by Dr. Marion Sims the bimanual method,

often affords valuable information. To carry it out, pressure is made with the left hand over the pubes, while the index finger of the right is kept in contact with the cervix uteri; the patient lying on her back, should be made to expire deeply, and, at this moment, the fingers of the left hand should be pressed firmly down into the pelvis, immediately over the pubes, while the index finger presses the uterus upward from the vagina. It will thus, to use Dr. Sims's words, "be easy to measure the size and shape of the body of the womb, for it will be held firmly between the fingers of the two hands, and its outline and irregularities will be ascertained with as much nicety as if it were outside the body." In thin subjects the results here enumerated can be attained; but in fat or very muscular women we sometimes fail in our efforts to feel the uterus at all through the abdominal parietes. Still, even with these exceptions, the bimanual method of examination is often of great value.

I have already told you, that in order to arrive at an accurate diagnosis, it is generally necessary to make a digital examination of the condition of the uterus and vagina, and to use both the speculum and the uterine sound. But in many cases the latter two modes are not only unnecessary, but positively forbidden. Thus, if on introducing the finger into the vagina, you can detect cancer of the os uteri, the introduction of the speculum becomes unnecessary, and may be injurious, while the use of the sound is altogether prohibited; or if, on using the speculum, we find the os and cervix uteri in a state of ulceration, the symptoms the patient is suffering from will probably be accounted for, and the introduction of the sound into the uterine cavity is uncalled for, and should therefore be avoided. So your examination in all cases is to be progressive, the finger always being used in the first instance. Any departure from this course I deprecate strongly.

Further, in a certain number of cases it is necessary to introduce the index finger into the rectum, in order to decide certain points which your previous examination failed in determining. Thus, with the finger in the rectum and the sound in the uterus, you can ascertain whether a tumor lying in the posterior *cul de sac* is attached to the uterus or not. In like manner, the sound being introduced into the bladder and the finger in the rectum, the absence of the uterus may be detected, or an inverted uterus distinguished from a polypus.

I have now, gentlemen, described very briefly the mode in which you are to investigate cases of supposed uterine disease. But without a knowledge of what is thus to be learned, the examination itself will be useless.

In my future lectures, I will call attention to the symptoms of, and the mode of treatment adapted to, the various forms of uterine disease, as suitable cases for their illustration may from time to time present themselves.

LECTURE II.

LEUCORRHEA—DEFINITION OF—CHARACTERISTICS OF—SOURCES OF—
VAGINAL—CERVICAL—UTERINE—VAGINITIS—CAUSES OF—TREAT-
MENT—CLITORIDECTOMY—VAGINISMUS.

It is a matter of much regret that the nomenclature of the diseases peculiar to women is so vague and indefinite; terms which in reality only express a symptom, the result of very various pathological conditions, being commonly used as indicative of a special disease. Thus we hear it said that a patient is suffering from "leucorrhœa," or it may be from "menorrhagia," while in point of fact these terms should only convey the idea of a prominent symptom. To-day I propose to call your attention to the subject of leucorrhœa; a word which literally means a white discharge, and for which the popular synonym is "the whites." It is a symptom met in connection with affections differing widely the one from the other, while the discharge itself varies greatly in color, in consistence, and even in chemical properties. It is so essential that you should bear in mind that although, as I have stated, leucorrhœa means a white discharge, the term is to be understood in a relative sense as opposed to a red sanguineous one, and that it includes all non-hæmorrhagic vaginal discharges. Thus very frequently it is of a light cream color, sometimes of a yellow, or again of a greenish tinge.

In its natural healthy condition, the vagina, while moist, should not secrete any appreciable discharge; but hardly any

departure from a perfectly healthy state of either the vagina or uterus ever takes place without leucorrhœa in some of its forms being present. You cannot have failed to remark, gentlemen, the extreme frequency of this symptom among the patients who have presented themselves here, and yet you have seen that the affections from which they have suffered were various. But before reminding you of the different abnormal conditions on which, as I have from time to time pointed out, these discharges depend, I must briefly enumerate the main characteristics they present, and the sources from which they proceed.

As already mentioned, the term leucorrhœa includes a great variety of non-hæmorrhagic discharges. It very commonly presents itself as a profuse mucous discharge, inodorous and light in color, or again as a thick creamy fluid, coating the whole surface of the vagina, and flowing into the speculum as you introduce it; then you have seen it so evidently purulent that, as I have pointed out, it was impossible to say whether it was the result of gonorrhœal infection or not; in other patients it presented a curdled appearance, or lastly, was seen as a thick, tenacious, glairy secretion, issuing from and filling up the os uteri. Now it is quite evident that these various forms of leucorrhœa must not only depend on different causes, but must also be secreted by different parts of the genital canal. Accordingly, we find vaginal leucorrhœa, cervical leucorrhœa, and uterine leucorrhœa, to exist as three distinct affections.

The discharge, when proceeding from the vagina, is generally a light-colored creamy-looking fluid, unless acute vaginitis be present, when it may become almost purulent; it is sometimes secreted from the whole surface of the vagina, but more frequently, especially in children, proceeds mainly from the vulvo-vaginal glands. Again, in some forms of erosion of the cervix uteri, the discharge is profuse and semi-purulent. That poured out by the cervical glands is very different in character;

the glands situated in this part of the uterus are very numerous, and when inflamed secrete a copious, tenacious, albuminous fluid, closely resembling in appearance the white of egg; this discharge is so remarkable and so pathognomonic of disease of the cervical canal, as to be unmistakable. Lastly, you may have leucorrhœa proceeding from the interior of the cavity of the uterus itself.

The occurrence of this form of leucorrhœa is less easily recognizable than any of the others, but of its existence as the results of a special affection I entertain no doubt; it is comparatively seldom that any discharge other than the glairy mucus secreted by the cervical glands, is seen to issue from the os uteri, but there is ample evidence to show that a copious discharge is, under certain circumstances, poured out from the mucous membrane lining the body of the uterus. This membrane at each menstrual period undergoes a great change, fitting it for the reception of the impregnated ovum, should such reach it—a change aptly termed by Dr. Aveling* “Nidation”—or, conception failing to occur, a process of degeneration takes place, and it is expelled in minute portions, or sometimes, though rarely, as a perfect sac. This great and frequently recurring change in its condition predisposes to the occurrence of disease; in addition to which there is also to be taken into consideration the vast alterations which occur in it during pregnancy, and subsequent to delivery or abortion. As a matter of fact we find that the approach of menstruation is in most women ushered in by the appearance of a white, mucous discharge, which there can be but little doubt, is mainly secreted by this membrane; therefore that a similar discharge should present itself when it is the seat of disease, is to be expected. The discharge issuing from this source is often not to be dis-

* *Obstetrical Journal of Great Britain and Ireland*, No. XVI, July, 1874.

tinguished from that secreted in the vagina, with which it becomes mingled; but while the latter has an acid, the uterine discharge has an alkaline reaction, and it is the mingling together of these two fluids of opposite reactions that gives rise to the curdled appearance sometimes seen in the vagina.

The causes of leucorrhœa may be either constitutional or local. Anything which debilitates the constitution is liable to be accompanied by the appearance of a white discharge; thus it is seldom absent when lactation has been unduly prolonged; or if a woman be debilitated by profuse menorrhagia she is nearly certain to be further weakened by the occurrence of leucorrhœa in the intervals between the menstrual periods. Again, it is met with in delicate girls, especially those of a leucophlegmatic temperament, in whom there exists a tendency to phthisis, and not infrequently in them it is the precursor, if not the cause, of the lung disease. Dr. Bennet, who for several years was engaged in practice at Mentone, a favorite resort, as you are aware, for consumptives, remarked that great improvement frequently took place in the condition of many patients threatened with phthisis in whom leucorrhœa existed, on that discharge being checked by appropriate treatment; an observation capable of easy explanation, if we bear in mind how exhausting must be the effect of a profuse discharge so rich in albumen as leucorrhœa is.

In cases which come under either of the heads I have alluded to, namely, debility arising from over-lactation, or from the effects of a weakly strumous constitution, our treatment must be twofold; in the first place to endeavor to check the debilitating discharge, and then to invigorate the constitution and improve the general health. With the view of effecting the former, you will order the use of astringent vaginal injections, those of alum or sulphate of zinc are the best, from two

to four drachms of either salt being dissolved in a quart of tepid water. This quantity should be injected twice a day into the vagina by means of an ordinary syphon syringe, and at the same time you should by change of air, when possible, by the adoption of a generous diet, and by the judicious administration of tonics, of which the preparations of iron are especially appropriate, endeavor to improve the patient's general health. But other cases of leucorrhœa are met with less amenable to treatment than these—namely, those which depend on the existence of visceral disease, such as that of the liver or kidney, cases in which special treatment can do no good, and therefore is to be avoided. It would be tedious and unprofitable, however, for me to enumerate all the constitutional causes which predispose to the occurrence of leucorrhœa. I may briefly sum up this part of the subject by saying, that any disease which debilitates and enfeebles the health, is likely to be sooner or later accompanied by leucorrhœa.

But in addition to the cases depending on disease of other organs, or of the system at large, we constantly meet with leucorrhœa as a symptom of local disease, and of none more frequently than that of inflammation of the vagina itself, or vaginitis as it is termed. You have seen over and over again examples of this.

The mucous membrane lining the vagina, in common with that of all other parts of the body, is liable to inflammation of both an acute and chronic character; the latter, however, is much the more common. We have recently had under treatment two well-marked instances of acute vaginitis, one in a young woman, J. McC—. She stated that she had been married for four years but had never been pregnant. She complained of burning pain in the vagina, of pain in the back, and of scalding in making water. On examining her, the entire

length of the vagina was seen to be of a bright scarlet color; it was tender to the touch, the introduction of a small speculum, and even of the finger, giving great pain.

As the speculum was being introduced, we saw a copious discharge of a greenish-yellow color to pour into it. The mucous membrane covering the os uteri was bright pink, the cervix itself being evidently congested.

Now these cases of acute vaginitis are rare, and I always look on them with suspicion; accordingly I questioned this patient closely as to the possibility of her having contracted gonorrhœa; she said it was impossible; but be the cause as it may, we had here to deal with a case of acute inflammation of the mucous membrane of the vagina, and I treated it as I would similar inflammation occurring in any other part of the body. If an oculist meets with a case of acute ophthalmia, he endeavors, in the first instance, to arrest the progress of the inflammation by local bloodletting; I advocate the same practice in acute vaginitis. You may remember that in this case I punctured the cervix freely and encouraged the bleeding, and ordered her saline purgatives, but I did not, in the first instance, make any application to the vagina. Caustics or astringents used at this stage would only have done harm. In the case I am referring to I purged the patient freely, and punctured the cervix at intervals of a few days, on each occasion abstracting a good deal of blood, and when the acuteness of the inflammation had subsided, applied to the vagina a solution of nitrate of silver, ten grains to the ounce, and subsequently a stronger one. At the end of two months this young woman returned, having in the interval become pregnant. Now had this woman been in hospital instead of attending as an out-patient, I should, in addition to the local abstraction of blood by puncturing or by leeches and the exhibition of purgatives, have prescribed warm

hip-baths, or directed hot-water* vaginal injections, to be used at least twice daily, which would not only have expedited the cure, but also have alleviated the woman's sufferings, and these are the means I recommend you to adopt in your future practice. The foregoing case afforded a good example of the difficulty of deciding between simple acute inflammation of the vagina and that depending on gonorrhœal infection. I must avow that I know of no means of distinguishing with any certainty between the two.

Another mode of treatment, of the greatest value, is by the application of glycerin. A roll of cotton-wool, or of wadding, with a strong thread attached to facilitate removal, is to be saturated with glycerin; this is to be then introduced into the vagina through a speculum, and left *in situ* for twenty-four hours. The glycerin, by its affinity for water, produces a copious serous discharge which, in a marked degree relieves the congestion that exists. In a future lecture, however, I will refer at greater length to the local use of glycerin in uterine affections.†

I have already said that cases of acute vaginitis are of infrequent occurrence; but, though acute vaginitis is not very often seen, subacute inflammation of the vagina, accompanied by leucorrhœa, is common enough, and is the cause of much suffering. The pruritus, the burning pain in the vagina, the frequent desire to micturate, and the scalding on doing so, though not so severe as in cases such as the one I have just detailed, are often constant and most distressing. The causes of

* For directions as to the mode of carrying out this treatment, see Lecture XVII.

† It is occasionally desirable to instruct patients how to carry out this method themselves. For this purpose a vulcanite repositor has been suggested by Dr. Clement Godson, which answers the purpose very well. It is made by Arnold & Sons, West Smithfield.

these attacks are various: you meet them sometimes in young healthy women, who generally attribute them to cold, but they are seen more frequently in married women; in whom, in addition to the causes named, I am inclined sometimes to attribute their occurrence to the effect of too frequent sexual intercourse, of intercourse occurring too soon after a menstrual period, or before the vagina has regained its normal condition after delivery.

There is one form of subacute vaginitis which gives rise to very distressing symptoms; in it we see apthous-looking patches on various parts of the vagina. I have invariably remarked that this condition of the vagina is accompanied by most distressing pruritus; not that pruritus does not occur in cases of vaginitis in which these apthæ do not exist, for on the contrary, pruritus is a very common accompaniment of every form of vaginitis, but it is most marked, and nearly if not always present in conjunction with them. And here let me impress on you the uselessness of attempting to treat itching about the vulva, without first ascertaining what the condition of the vagina and uterus may be; for you will seldom fail to discover, either that inflammation of the mucous membrane exists, or that the cervix uteri is congested or abraded, and till these be cured, all your efforts to relieve the pruritus permanently will fail. If vaginitis alone exist, you will, with the view of attaining this object, and at the same time of checking the pruritus which it causes, use in the first instance soothing applications and then astringent ones. Of the former none can compare with infusion of tobacco. It should be made by infusing from half a drachm to a drachm of the unmanufactured leaf in a pint of boiling water. The infusion thus prepared should be injected into the vagina twice a day. It is necessary, however, to exercise some caution in using it, for if the orifice of the vagina be very narrow, some of the infusion

may be retained in that canal, and nausea and vomiting result from its absorption into the system.

An infusion of hops, made by infusing an ounce of hops in a quart of boiling water is another very soothing remedy. It may be employed without the risk of the occurrence of the unpleasant symptoms which occasionally follow the use of the infusion of tobacco; infusion of linseed also forms an excellent and soothing lotion.

When the acute symptoms have abated, the addition of borax, in the proportion of a drachm to the pint, adds greatly to the efficacy of either of these infusions, or a solution of borax in tepid water may, if preferred, be employed. Very often, indeed, great good may be effected by injecting the vagina with plain warm water, provided it be done efficiently; but I must refer to this subject again.*

The itching in these cases is sometimes almost intolerable.† To relieve this most distressing symptom, I am in the habit of recommending the patient, after she has syringed or sponged herself with warm water, to place between the labia a piece of lint or pledget of cotton soaked in a lotion composed of carbolic acid, ten grains; acetate of morphia, eight grains; dilute hydrocyanic acid, two drachms; glycerin, four drachms; and water to four ounces. Sometimes when the vagina is excessively tender, medicated pessaries containing acetate of lead or tannin do good; but I do not think that any kind of pessary can be relied on. Dr. Greenhalgh recommends their being made with glycerin and gelatin, and containing whatever medical substance may be desired; such doubtless possess the advantages of not producing the disagreeable greasy discharge, which those made in the ordinary way do.

* See Lecture XVII.

† It should be borne in mind that pruritus is sometimes a prominent symptom in cases of diabetes.

You will often find that vaginitis is associated with a weakly state of the constitution, and that you are called on to administer tonics; of these the mineral acids seem especially useful. But it does not follow that because you cure the vaginitis the leucorrhœa will disappear. Sometimes it continues when all symptoms of inflammation have subsided, and then you can use freely and with great advantage, as injections, solutions of alum, two drachms, or of sulphate of zinc, one drachm to the pint; but often all our efforts fail to check entirely the discharge, and it becomes chronic or disappears only after a long interval. Before leaving the subject of vaginitis, let me caution you against pronouncing every little blush of redness that may be seen on the vagina to be inflammatory, or of attributing all the symptoms the patient may complain of to that affection.

In nearly every case of leucorrhœa the discharge is much more profuse immediately after the menstrual period has terminated, and occasionally it seems to take the place of the latter, which is then suppressed. In these latter cases the leucorrhœa is profuse at the date when menstruation ought to occur, and lessens considerably, or nearly disappears, for a time corresponding to the interval between the ordinary periods. This is likely to occur when the patient is debilitated by prolonged lactation, or by the existence of some constitutional disease. A white discharge, accompanied occasionally by a good deal of vascularity and irritation of the orifice of the vagina, is also not unfrequently met with in unhealthy strumous children; and this has sometimes given rise to a suspicion that the child had been injured by an attempt at sexual intercourse. You must exercise great caution in such cases in giving an opinion; but, unless strong confirmatory evidence exists, showing that an attempt at penetration has been made, I would have you slow in encouraging the idea. You may have recently seen an ex-

ample of such a case in the children's ward; the little patient was but six years old. Cleanliness and a nutritious diet, with the exhibition of iron, speedily improved her condition. I also passed a camel's-hair pencil saturated in a solution of nitrate of silver, up the vagina every four days, and she was soon quite well. You must also bear in mind, that irritation about the vulva may be kept up in children by the presence of worms in the rectum. Even in adults the possibility of leucorrhœa depending on irritation existing in the rectum must not be overlooked. Thus among our extern patients you recently saw a young woman in whom vaginitis was kept up by the presence of tapeworm.

Hitherto I have spoken only with reference to discharges of purely vaginal origin; we have besides, however, not only cervical but uterine leucorrhœa. It is also nearly certain that in some forms of disease of the Fallopian tubes, a discharge is secreted which finds its way into the uterus and thence to the vagina, but it is very difficult, if not impossible, to diagnose the existence of Fallopian disease during life.

You are all aware of the appearance which cervical leucorrhœa presents, I have called your attention to it so frequently. In its healthy condition the cervix uteri secretes a transparent viscid fluid in such small quantities as not in general to attract any attention, or be observed when the speculum is introduced; but, when the cervical canal becomes the seat of inflammation, this secretion becomes not only much more profuse, but also very thick and tenacious, blocking up the os uteri, and hanging out of it as a rope of viscid mucus which it is almost impossible to wipe away. Cervical leucorrhœa, or as it is sometimes called, "cervical catarrh," is an effectual bar to pregnancy, in this contrasting with other forms of leucorrhœa which do not necessarily cause sterility.

The condition of the cervix giving origin to cervical leucor-

rhœa is one very difficult to cure ; to do so you must treat the whole extent of the cervical canal, and this can seldom be accomplished without applying to its whole length a strong caustic, such as the fuming nitric acid, which I prefer to any other ; the application of the solution of nitrate of silver, and even of the solid nitrate itself, will seldom be sufficient. If the case be not of very old standing, the introduction of one of the solid zinc points, as suggested by Dr. Braxton Hicks, often does good. You have seen me apply them several times with success ; they cause a good deal of local irritation, and give some pain, but this soon passes off. The chance of this occurring may, however, be much lessened, by placing a roll of cotton saturated with glycerin, in contact with the os uteri, after the zinc point has been introduced. At present, however, I can only glance at the treatment of this most obstinate affection ; I shall return to it again, when the subject of disease of the cervix uteri comes before us.

I have already stated that leucorrhœa may proceed from the interior of the body of the uterus ; the diagnosis of this form is less easily made than that of the others. Its presence is generally accompanied by a greater or less amount of pain, which is not necessarily present in either of the other forms. The reason of this is easily understood, for uterine leucorrhœa is, I believe, nearly always the result of disease of the lining membrane of the womb. When leucorrhœa is vicarious with, or, as already stated, takes the place of, the regular menstrual discharge, it probably proceeds from the interior of the uterus.

Though I have never been able to verify it by a *post-mortem* examination, I believe that the thin clear discharge sometimes seen issuing from the os uteri proceeds from the cavity of the uterus.

Perhaps the present is the most suitable time I shall find for alluding to a practice, unfortunately of not very rare occur-

rence, which, while it destroys the health of the body, if persisted in, impairs in no less degree the powers of the mind, and which is nearly always accompanied by leucorrhœa—I allude to masturbation. I do not believe all I have heard as to its great frequency, but that it is practiced by many females is too true. In some, I have no doubt, it has been the result of uterine disease, the habit having been contracted accidentally in the first instance, in the efforts to procure alleviation from the irritation which so often exists about the orifice of the vagina; but, be the cause what it may, it is soon accompanied by vaginitis and endo-cervicitis, manifested by the presence of the well-known, glairy, cervical discharge. Beware, however, of charging a patient with being addicted to this degrading habit, because suspicious symptoms present themselves; the dilated pupil, the downcast look, the uncontrollable excitement which a vaginal examination causes, generally tell the tale; added to this, there is often a severe lancinating pain complained of immediately over the pubes, and in several cases I have noticed that vomiting *at night* has been a prominent symptom. The habit if carried to any extent also gives rise to vaginitis and even to endo-metritis of an obstinate form, as well as to serious constitutional symptoms, of which menorrhagia is probably the most common. These distressing cases can be cured by moral means alone; local treatment is useless, and generally injurious, for it attracts the patient's attention to the genital organs, the very thing we should be most anxious to avoid. The administration of bromide of potassium in thirty grain doses is, however, sometimes beneficial. I cannot find words sufficiently strong to condemn, as I would, the barbarous habit of mutilating the patient by the removal of the clitoris. This operation is as useless as it is disgusting; for there is no truth in the idea that in the clitoris alone is seated the nervous expansion which subserves the sexual orgasm.

There is a condition of the vagina, or, to speak more correctly, of the orifice of the vagina, to which the term *vaginismus* is applied, the result apparently of some irritation of the nerves supplying the sphincter, or constrictor vaginae muscle, and which sometimes causes much distress. Any attempt at sexual intercourse, even at introduction of the finger, producing spasmodic closure of the canal. In some cases this condition is evidently the result of inflammation, and can only be relieved by the use of soothing applications, such as those already recommended in cases of ordinary vaginitis. In addition to these means, Dr. Barnes recommends that the patient should wear a cylindrical vaginal pessary made of india-rubber, which is to be inflated with air after its introduction; this acts beneficially by keeping apart the irritable and inflamed walls of the vagina, and moreover, according to Dr. Barnes, by the "mechanical support it affords to the vaginal walls, subdues the morbid contractility of the muscular tissue."

In other cases, however, no inflammation exists, except it may have been produced by attempts to forcibly overcome the spasm.

Dr. Marion Sims is of opinion, that under such circumstances the hymen itself is the seat of the excessive irritability, and he has succeeded in perfectly curing several patients by dissecting out the hymeneal membrane, and afterwards dilating the vagina by means of glass dilators (*Uterine Surgery*, page 335). *Vaginismus*, in an aggravated form, is not of frequent occurrence, but cases exhibiting minor degrees of spasm are met with in practice from time to time.

But you must be careful not to confound *vaginismus* with those not uncommon cases in which sexual intercourse is simply painful, a condition termed by Dr. Barnes "*Dyspareunia*." This condition, in the majority of cases, depends on inflammation of the vagina or cervix uteri, but occasionally its causes

are obscure, and baffle, or for a long time resist, our efforts to effect a cure.

I may here allude to a trifling, though very troublesome affection, not unfrequently met with in females, and which is often accompanied by a leucorrhœal discharge, namely, the occurrence of little vascular mucous tumors, growing round the orifice of the urethra. These frequently give rise to considerable irritation, and even actual pain, the passage of the urine over their surface sometimes causing much suffering. Their removal sometimes gives trouble. Caustics generally fail, while considerable bleeding has followed attempts to extirpate them. The late Dr. Beatty was in the habit of passing a ligature of fine iron or silver wire round them with Wilde's snare for aural polypi and twisting them off; but the means most likely to be followed by permanent cure, will be found to consist in cauterizing them freely by means of the galvanic or thermo-cautery.

LECTURE III.

MENSTRUATION—AMENORRHEA—CAUSES OF—LOCAL AND CONSTITUTIONAL—TREATMENT OF VARIOUS FORMS—USE OF GALVANIC STEM PESSARY—MEDICAL AGENTS.

BY menstruation, as you are aware, is understood that periodic sanguineous discharge which occurs in the human female at regular intervals of about four weeks. Its first appearance in the majority of girls takes place in their fourteenth or fifteenth year, but it may be, and frequently is, deferred to a much later period without the health being impaired. The discharge itself is blood mixed with mucus, and with shreds of the mucous membrane lining the body of the uterus. The blood proceeds from the uterus, as has been proved beyond all possibility of doubt; for, in cases of inversion of the uterus, the blood has in several instances been seen to flow from the everted surface; but, although the discharge proceeds from the uterus, the function depends on the ovaries, both for the stimulus necessary for its first appearance, subsequent regular recurrence, and due performance. These organs, as you have learned elsewhere, become congested as the period approaches, and finally extrude the mature ovum, while the uterus, participating in the same condition, assumes a state of activity; the membrane which lines its cavity becomes thickened and affords a favorable nidus to the ovum should it be fecundated; or that failing to occur, it becomes disintegrated and is cast off with an escape of blood in a sufficient quantity to relieve the

congestion which has temporarily existed. The most careless observer must see how slight a cause may disturb the equilibrium which nature designs to be maintained during the performance of this nicely-adjusted function, and how a chill or other suddenly acting cause, by checking the menstrual discharge, may lay the seeds of uterine disease.

As already stated, the majority of females commence to menstruate during their fourteenth or fifteenth year; in many, however, the discharge does not show itself till a much later age. The interval which elapses between each period varies a good deal in different women; it should not, however, be less than twenty-one, or exceed twenty-eight days; the duration of the period, too, varies much; in some extending over but two or three, in others continuing for six or seven days; if these limits be exceeded menstruation cannot be looked upon as being strictly normal, though instances are met with in which a considerable departure from the foregoing standard occurs, and yet the health in no way suffers. The reproductive powers of the female cease with the cessation of menstruation, which occurs at a date even more irregular than does the first appearance of the flow, and this period, termed by some "the change of life," by others the "climacteric period," is a time marked by a special tendency to the development of disease.

The departures from normal healthy menstruation are numerous. Menstruation may be scanty or profuse; it may occur only after long intervals, or return after the lapse of but a few days; it may be painful, or, finally, not appear at all. The latter condition is probably the rarest. Amenorrhœa, taken in the limited sense of total absence or suppression of menstruation (the suppression of menstruation during pregnancy being of course excluded), is not by any means so frequently met with, as are the other forms of derangement of the menstrual function; but, if taken in the more extended

sense of greatly diminished menstruation, it comes commonly enough under our notice, and it is in this latter sense that we must consider the subject.

Cases of amenorrhœa naturally divide themselves into two classes, namely, those in which menstruation has never occurred, or, if at all, in a very imperfect manner; and those in which the function once normally performed, now appears irregularly and with a scanty flow, or has ceased entirely. Each of these, again, must be subdivided into two other classes, as the amenorrhœa depends on local or constitutional causes.

It is self-evident that for the due appearance of the discharge, no less than for its regular return, both the ovaries and the uterus must be in a normal state; for, though poured out from the inner surface of the latter, the stimulus essential to produce menstruation must proceed from the ovaries. If, therefore, the ovaries be absent, diseased, or imperfectly developed, or if the uterus be wanting or rudimentary, the discharge will not appear at all, or at best, as a mere sign. There is generally much difficulty in deciding whether the ovaries are at fault or not; if the patient be well formed, if the breasts have become full and round, and if, in addition, the symptoms known as the "menstrual molimina" show themselves, we may conclude that it is not from any fault in the ovaries that the non-appearance of the discharge depends. These symptoms, in addition to numerous vague nervous sensations, consist of pain in and fullness of the mammæ, which sometimes become swollen and hard; of pain in the ovarian region; weary aching across the loins and down the thighs; of flushings and headaches, and sometimes of nausea. If all these symptoms be wanting, there is strong reason to suspect that the absence of menstruation depends on some abnormal condition of the ovaries; but what that condition may be, can seldom be known during life.

In the majority of cases in which the absence of the men-

strual molimina leads us to suspect that the ovaries are absent or defective, the patient's general contour is imperfect and the stature stunted; but this is not by any means necessarily so. There is a woman at present attending our out-patient department, whose case I called your attention to the other day. She is well-formed, aged about thirty, and has been married for about four years. Menstruation occurs, she tells you, only at intervals of three months or upwards, and she adds, that until after marriage she menstruated altogether but some half-dozen times, at intervals of at least twelve months. Sexual intercourse in her case has evidently acted as an ovarian stimulus, inducing the flow to appear after shorter intervals and in increased quantities; she has never been pregnant. I am of the opinion that in this case the ovaries, although present, are in a state of imperfect development. I should add that the vagina and uterus are in all respects normal.

Again, the uterus may be entirely wanting or only in a rudimentary condition. No case in which the uterus was altogether wanting has presented itself at this hospital since my connection with it, but I must nevertheless refer to the subject. Cases occur in which all the symptoms constituting the menstrual molimina are present, and in which consequently we may fairly conclude that the ovaries are normal, and yet menstruation does not follow. In some of these the uterus has been proved to be entirely absent. The diagnosis on this point is not difficult to make, for if a silver catheter be introduced into the bladder and the finger into the rectum, the presence or absence of the uterus can be determined with certainty.

But though cases in which the uterus is altogether wanting are rare, instances of an imperfect or rudimentary condition of the organ are from time to time met with. The following one recently came under my observation: The patient, a married lady, had never been pregnant; menstruation appeared regu-

larly, but was very scanty, and lasted hardly a day ; the uterus measured but an inch in length, the vagina too was very short, the entire length being only about two inches ; she consulted me on account of her sterility. In such cases the protracted use of the galvanic stem pessary has occasionally been productive of benefit, and in some instances the uterus has elongated and increased in size under the influence of the stimulus the instrument has afforded, menstruation at the same time becoming more nearly or even altogether normal. Shortening of the vagina is very commonly met with in cases in which the uterus is imperfectly developed. In some instances that canal is entirely absent. A specimen illustrating this condition was exhibited at a meeting of the Dublin Obstetrical Society, a little time ago. The patient from whose body it was taken, had been for years under observation. She suffered the most intense paroxysms of pain for some days during each month, caused probably by the attempts made by the uterus to expel the menstrual fluid ; after death a pouch was found below the os uteri, distended with fluid. The evident total absence of the vagina in this case deterred Dr. Sawyer, under whose care this patient had been, from attempting an operation. Lesser degrees of atresia are, however, more frequent, and afford fair promise of being benefited by operation ; and as serious consequences, and even death, are likely to result if an exit for the menstrual fluid be not obtained, the attempt to reach the upper portion of the vagina by a careful dissection is certainly warranted.

More important, because more common and more often capable of being benefited by treatment, are those cases of partial closure of the vagina which are occasionally met with. This closure is sometimes of but limited extent, the result of local inflammation, which may have been excited in early childhood ; but it occurs more commonly after tedious labors, in which the

second stage having been unduly prolonged, sloughing has followed, and finally the vaginal walls have united to a greater or less extent. When the occlusion is the result of adhesions, formed during infancy or early childhood, it is generally situated low down in the vagina, at or near the vulva; but if it be the result of sloughing following on protracted labor, it is more likely to be met with in the middle or upper third of the canal.

Both these forms are generally capable of being cured by an operation, a small opening being first made, which should be gradually and carefully enlarged; but it would be impossible to describe the steps of an operation, which must vary in each case according to the part of the vagina at which the occlusion is situated, its extent, and the age of the patient. In all cases, great care is necessary to prevent the adhesions reforming. With this view the vaginal walls must be kept apart by the intervention of a pledget of lint or of cotton-wool saturated with glycerin, and for a long time after the surfaces have healed, the patient should wear a glass dilator for two or three hours daily, for in these cases there is always a great tendency in the vagina to contract. The term *atresia* is applied to all cases of absence or closure of the vagina.

Lastly, amenorrhœa may be occasioned by the presence of an imperforate hymen, a condition, however, so rare that I have met with but one example of it. The hymen in that case existed as a dense membrane, which bulged outwards through the vulva and was distended by the fluid which filled the vagina. The patient was a girl aged about sixteen; the fluid was first slowly and cautiously evacuated through a small canula, exit being thus given to a large quantity of a dark inodorous fluid, and subsequently the membrane was freely divided by a crucial incision.

Apart from these malformations, which are comparatively seldom met with, certain local conditions occur which interfere with the regular performance of menstruation and cause amenorrhœa. Of these none is more common than congestion of the mucous membrane lining the body of the uterus, the result of exposure to cold, or of some shock or inflammatory attack. If a woman during the menstrual flow be suddenly chilled, or remain sitting or standing for a length of time in a damp, cold place, the flow is very likely to be checked, congestion of the uterus, or at least of the mucous membrane lining its cavity, being the result. This condition may then become permanent, and till it is relieved the discharge will not reappear, or, if at all, in an imperfect manner. Amenorrhœa depending on this cause gives rise to very distressing symptoms; the patient complains of pain in the back, of a sense of weight in the pelvis, and, more especially, of headache. You have frequently seen instances of this form of amenorrhœa among the patients in the extern department. These cases nearly always apply for relief during the interval which elapses between two menstrual periods, and you must consequently at first limit your efforts to relieve the prominent symptom, namely, the headache, and not make any attempt to re-establish the flow till the time comes round when it ought in the regular course to appear. With the view to the former, I almost invariably give mild purgatives. In dispensary practice I usually prescribe a mixture containing one ounce of sulphate of magnesia in eight ounces of infusion of quassia, to which I generally add a drachm and a half of dilute sulphuric acid. Two tablespoonfuls of this mixture taken morning and evening, nearly always act as a mild laxative; should it not, I direct a third dose to be taken at midday. This simple treatment generally relieves the head, and you must have repeatedly noticed that patients have returned stating that the headache had entirely disappeared, and

sometimes that the discharge, which had been suppressed, had again showed itself. Instead of the saline purgative just alluded to, my friend, Dr. James Little, is in the habit of prescribing a pill containing one or two grains of extract of aloes combined with one-sixth of a grain of tartar emetic, to be taken each night at bedtime; a formula which he has found of great use in cases of recent standing, occurring in girls of plethoric habit.

But often additional measures are necessary, and these you are to have recourse to when the time at which the flow should appear approaches. You may direct the patient to sit with her feet in hot water for fifteen minutes each night for several days in succession; by mixing two or three tablespoonfuls of mustard with the water you will greatly increase the efficacy of this treatment; or what in suitable cases, is often more efficacious, employ the cold hip-bath, directions for the use of which I will give hereafter.* If the patient be plethoric the application of a couple of leeches to the verge of the anus, or to the inner and upper part of the thigh, constitutes a safe and often very efficacious mode of treatment. Until you have succeeded in relieving the local congestion, you should not have recourse to the exhibition of that class of remedies which stimulate the ovaries and uterus, and which are known by the name of emmenagogues, for such treatment would only aggravate the evil.

Cases, however, occur in which the uterus seems so sluggish that though free from disease, it will not respond to the natural stimulus which the ovaries should afford, and this though no constitutional disease exists; these are the cases in which means directed to stimulate the uterus do good, foremost among which is electricity. A remarkable example of the

* See Lecture XVI.

benefit of this agent came recently under my observation. J. N., æt. nineteen, a pale, strumous-looking girl, had never menstruated, but for some months past had periodically vomited blood; the vagina and uterus were normal; strychnia and other drugs were administered without benefit. Medicines were discontinued, and electricity was tried; one pole of the battery being applied to the sacrum and the other to the vulva; this was continued daily for a fortnight, when she complained of intense headache, of pain in the back, and of sickness of stomach; the next day the catamenia appeared freely, but strange to say none of the symptoms subsided; the vomiting was incessant and the febrile symptoms ran very high; the flow continued for six days very freely and then ceased, and with it disappeared the febrile symptoms, the sickness of stomach, and headache. At the end of four weeks she again began to suffer from headache; electricity was again had recourse to, and the catamenia reappeared, this time unaccompanied by the severe symptoms which had previously marked its advent.

There is another method of stimulating the uterus which I have practiced with much success in such cases. I allude to the use of the so-called "galvanic"* stem pessary. This little instrument (Fig. 5) is made of copper and zinc, the upper half of the stem being zinc, the lower copper, or, better still, of two

* While I retain the term "galvanic," as applied to this pessary, and say I have found it of use, I do not wish it to be understood that I consider it to possess any galvanic properties, which, as such, act on the uterus. There can be no doubt, however, but that when the two metals (copper and zinc) of which the instrument is composed, are in metallic contact, and surrounded by a fluid containing saline matter in solution, a certain amount of electrical action goes on, and that when the stem is introduced into the cervical canal, the salts contained in the uterine secretions are decomposed, and corresponding salts and oxides of zinc and copper are formed which act on the mucous membrane lining the uterus.

parallel pieces of copper and zinc united throughout the entire length of the stem. Dr. Thomas, of New York, recommends a further modification, and in some cases uses a stem composed of alternate beads of copper and zinc, strung together on a copper wire, thus making the stem flexible, which is occasionally an advantage. The bulb to which the stem is attached is hollow, and there is an orifice in its under surface into which the point of a sound being inserted the pessary can be carried up to the womb; the stem is passed through the cervix till its point *nearly* reaches the fundus, and the instrument is then left with the stem in the cavity of the uterus. These pessaries are made of various sizes and lengths, a matter of great importance, as not only does the uterus vary in length in different individuals, but the cervix also will in one case admit a stem much larger than in another; you should therefore measure the depth of the uterus before you attempt to introduce one of these pessaries, and select one a *little shorter* than the depth of the womb; taking care also that the diameter of the stem is suitable to the capacity of the cervix; for if you introduce one with too slender a stem it will immediately fall out, or if, on the other hand, it be too thick, the introduction will be a matter of great difficulty, and even if introduced, the instrument will cause so much pain as to render its removal a matter of necessity.

It requires some dexterity to introduce the stem, but a little practice will soon enable you to overcome the difficulty; if the cervix be very narrow it is better to dilate it a little by introducing a single length of a No. 2 or 3 sea-tangle bougie, but the necessity for this does not often occur. I leave this instrument when introduced *in situ* for three or four weeks, unless it should cause irritation or pain, in which case it should,

FIG. 5.

Galvanic
Stem Pessary.

of course, be removed ; but under any circumstances the patient should be examined after a lapse of a month, lest ulceration be produced, a result which never occurs if due care be taken. If at the end of a month the desired improvement in the state of the menstrual function has not taken place, it is better to remove the instrument, and reintroduce it after the lapse of a few days. I have several times seen the happiest results follow the use of this instrument, both in the case of young women who have never menstruated, or in whom the function has been imperfectly performed, and also in married women in whom it has been suspended for a time. It is not so well adapted to the treatment of hospital patients as to those we treat in private ; for it is very difficult to keep the former in view for any length of time, or to get them to return after the proper intervals to have the pessary removed. You saw me introduce one, however, a few days ago, and the case will be an interesting one to watch. The patient is a married woman, æt. thirty-five ; menstruation has not appeared at all for the last three years ; I cannot detect any symptoms of either constitutional or local disease which can account for this. Medicines having failed to do her good, I have suspended their use ; we shall see what the pessary may effect.

There is one form of irregular menstruation which must be classed under the heading of amenorrhœa, for the function is defectively performed. In this form the discharge appears at the regular time, but stops after a day or so, to reappear in, perhaps, twenty-four or forty-eight hours—thus coming and going at short intervals. This kind of “interrupted” menstruation, I have noticed several times in connection with chronic endometritis and thickening of the cervix. A very good example of this is afforded in the case of a patient at present under treatment in the pay ward. She is a nurse-tender, and was admitted complaining of severe pain in back and thigh,

which incapacitated her from following her occupation ; there is some erosion of the lips of the os ; the uterus is heavy and anteverted, and the cervix greatly thickened. Unless in her case we can cure this condition of the uterus, menstruation will not again follow its normal course.

Cases of amenorrhœa depending upon constitutional causes are of more frequent occurrence than those of local origin. You must all be aware that suppression of menstruation, or its appearance as a mere sign, is often an early and ominous symptom in cases of incipient phthisis, and frequently it is the symptom for which we are consulted. Let me here repeat the warning I have so often given you, when such cases have presented themselves, not to yield to the solicitations of the patient, or of her friends, to attempt to restore the function by the exhibition of stimulating emmenagogues ; the attempt would be vain and the result disastrous both to your character and to the patient's health. Females almost invariably look on suppression of menstruation as the cause of their ill-health, and will express day after day the certainty they feel that health would be restored if the discharge could be made to reappear, an assertion often true if only read conversely ; the reappearance of the discharge indicating that health had improved, but not being the cause of that improvement. Thus some women menstruate regularly when resident in certain localities, but never when compelled to leave them. I saw some time since a lady who was quite regular during a two years' residence at Falmouth, though for a long time previous to her going there menstruation had been entirely suppressed. Business matters compelled her to revisit Ireland, the amenorrhœa soon became habitual ; symptoms of phthisis rapidly developed themselves, and she died in a few months of consumption. Need I add that in such cases the lung disease, not the amenorrhœa, is the condition calling for treatment.

All other forms of organic diseases come under the same category, as being frequently the causes of amenorrhœa; but it is not my province to enter on the treatment of these, and the enumeration of them would be tedious. One constitutional disease, however, of which amenorrhœa is a prominent symptom, calls for special notice; I mean anæmia, including under that term chlorosis. In it, as you are aware, the patient presents a sickly yellowish-green color. She complains of pain in the back, of lassitude, and often of headache; nearly always the appetite is bad and the taste depraved; the bowels are constipated, and the tongue generally furred. These cases are unfortunately too common among our town population, especially among those poor women who work hour after hour from early morning till late at night, earning a miserable pittance with the needle. With them we can do but little; country air and a generous diet would soon work wonders for them, but the remedy is beyond their reach. In many, however, some good can be effected by the exhibition of tonics, and especially of iron, a remedy which above all others is here indicated. As constipation is nearly always present, you should combine aloes with it; this greatly enhances its activity; two grains of the sulphate of iron, with a quarter or half a grain of extract of aloes, three times a day, sometimes acts like a charm.

Another medicine of the highest value is strychnia; five drops of the liquor strychniæ, which is equivalent to the one-twenty-fourth of a grain of the alkaloid, gradually increased to ten drops, three times a day, alone or in combination with the tincture of the perchloride of iron, sometimes produces the most beneficial results; but I think it is more suitable to those cases in which simple debility rather than a chlorotic condition is present. Strychnia, I believe, acts as a powerful stimulus to the ovaries, as well as a general tonic.

When no anæmia is present, and where the indication seems to be rather to stimulate the ovaries and uterus, I have found the combination of five drops of the tincture of iodine and five of the solution of strychnia, productive of much benefit.

I shall allude to but one other constitutional cause of amenorrhœa. It is one of not very infrequent occurrence. I mean a plethoric condition of the system. In such women the complexion is high, the pulse strong; they suffer much from flushing and headache, especially at the time menstruation ought to occur. In such cases active outdoor exercise, a moderately abstemious diet, and the exhibition of the acid saline purgative already recommended in cases of local congestion, will generally produce good results. We should aim at establishing periodicity, and selecting the time in each month when the occurrence of the menses indicate that menstruation ought to occur, apply two or three leeches to the inside of the thighs or to the very verge of the anus, thus relieving the local congestion, and thereby favoring the chance of the natural flow appearing; or, if the patient be married, puncture the cervix and abstract the blood directly from the uterus itself.

LECTURE IV.

DYSMENORRHŒA—DEFINITION—MEMBRANE THROWN OFF DURING—
SPASMODIC—INFLAMMATORY—CAUSE OF PAIN IN—TYPICAL CASE
OF—TREATMENT OF—MECHANICAL—SURGICAL.

INTIMATELY connected with the subject of amenorrhœa, is that of painful menstruation, or dysmenorrhœa, as it is termed; a subject the pathology of which is still far from being clearly understood.

Menstruation, like all the other functions of the body, to be perfectly normal should be painless; but in point of fact, the majority of women suffer more or less pain and discomfort before the appearance of, or during the flow, while in many the sufferings are very severe. In dysmenorrhœa, as a general rule, the pain commences about twenty-four hours before the discharge appears, increasing in severity as the period approaches, sometimes becoming so intense that the patient cannot move about, but is compelled to lie down, and even to roll in agony on the bed; occasionally, too, nausea and even vomiting, occur. In due time the discharge appears, and then in many instances relief is obtained; sometimes, however, the pain lasts during the whole period, or becomes paroxysmal; again, not very unfrequently clots, and sometimes shreds, are expelled *per vaginam*, and instances are recorded in which large pieces of membrane, and even a perfect cast of the entire cavity of the uterus, have thus come away during attacks of painful menstruation. This dysmenorrhœal membrane is an

exfoliation of the mucous membrane lining the cavity of the uterus, which is cast off as a perfect sac, instead of being detached in shreds. Its expulsion has on some occasions given rise to the suspicion of pregnancy ; a suspicion which a careful examination of the bag will speedily dissipate, as of course all trace of an ovum will be wanting.

Authors differ greatly as to the nature of the causes producing painful menstruation ; no theory has of late years been so prominently brought forward, or so warmly advocated as the mechanical one. Mechanical dysmenorrhœa, and obstructive dysmenorrhœa, are terms you will hear constantly made use of. Now, while admitting that mechanical obstruction to the exit of the menstrual discharge occurs, I doubt that it is as frequently a cause of painful menstruation as is generally stated ; nor can I admit the correctness of the axiom laid down by Dr. Marion Sims, "that there can be no dysmenorrhœa properly speaking, unless there be some mechanical obstacle to the egress of the flow, at some point between the os internum and the os externum, or throughout the whole cervical canal."* Such an unqualified assertion made by a writer of such acknowledged weight, is calculated to produce much mischief, by inducing surgeons to have recourse to operative interference for the relief of dysmenorrhœa, which in many cases may be wholly unnecessary.

For practical purposes I think it sufficient to class cases of dysmenorrhœa under four heads, namely : 1st. Spasmodic ; 2d. Ovarian ; 3d. Inflammatory ; and 4th. Mechanical dysmenorrhœa.

In spasmodic dysmenorrhœa the pain, as in most of the other forms, precedes the appearance of the discharge. In the majority of cases it is met with, either in delicate girls of feeble

* Uterine Surgery, p. 143.

constitution and leucophlegmatic temperament, or, again, in women of full habit, especially if they lead an inactive life. I have pointed out to you from time to time, numerous examples of this form of painful menstruation in seamstresses, and in poorly-fed overworked servants. In these cases the flow is in general scanty, and its appearance does not bring any marked relief, the pain continuing more or less during the whole of the period; it is not, however, always equally severe, but is paroxysmal, being less so while the patient is warm, but becoming aggravated by the least exposure to cold. This form of dysmenorrhœa is by some writers described as neuralgic; its true nature, however, is very obscure, but its attacks can almost with certainty be cut short by the administration of sedatives and antispasmodics; and these are the remedies you should prescribe. I generally give a pill containing half a grain of opium, one of Indian hemp, and two of camphor, at bedtime—a combination which seldom fails to give at least temporary relief; or if for any reason opium is objectionable, I substitute for it two grains of the extract of conium. In some cases the hypodermic injection of a solution of morphia and atropia* affords relief, when opium administered by the mouth or by the rectum has failed.

When the attacks have become habitual, and the patient is consequently obliged to have recourse regularly to the use of medicines to obtain relief, I usually direct her to have by her, a mixture containing two drachms of tincture of Indian hemp, two drachms of the liquor opii sedativus, two drachms of the compound tincture of chloroform, and water sufficient to make

* The following is the formula I use in such cases: Acetate of morphia, four grains; solution of atropia, four drops; water, two drachms—ten drops of this contain one-third of a grain of morphia, the largest dose which should be administered on the first occasion. It is safer to inject a small quantity at first, and repeat the dose if necessary.

a six-ounce mixture; of this she should take a tablespoonful every two hours. Sometimes five grains of lupulin, taken in the form of a pill, thrice a day, from the time the first symptom of the approaching paroxysm is perceived, will stave off the attack altogether. The patient should also take a warm hip-bath every night at bedtime for a week before the expected recurrence of the menstrual period, and if prevented by the pain from sleeping, have a full dose of the hydrate of chloral. This treatment is, however, only palliative, and as the cause generally lies in some fault of the constitution, or system at large, our object should be to correct that condition by treatment carried out during the interval between the menstrual periods. If you can detect symptoms of imperfect digestion, their removal is sometimes followed by relief of the dysmenorrhœa; while if the patient be anæmic, the exhibition of iron, or sometimes of arsenic, is of the greatest use. I am convinced, however, that many cases of spasmodic dysmenorrhœa are due to congestion of the lining membrane of the uterus, and that this is specially the case in women of full habit, who lead indolent lives, and in whom great benefit follows from the adoption of more abstemious diet, and more active habits, together with occasional use of saline purgatives.

In ovarian dysmenorrhœa, the ovaries are engaged more than the uterus, though the latter organ frequently participates in the abnormal congestion. In it, the paroxysm is preceded by pain in the ovarian regions, and by a feeling of tension, often amounting to acute pain, in the mammæ, and sometimes by headache. The attacks may sometimes be averted by the use of saline purgatives taken immediately before their anticipated return; if the case be of any standing, the administration of the bromide of potassium or of ammonium, in twenty to thirty grain doses, three times a day for a week before each menstrual period, together with warm hip-baths at bedtime

should be had recourse to. This treatment, or that of a similar character, directed to relieve or prevent the ovarian congestion, will generally prove successful.

Inflammatory dysmenorrhœa is a common affection, and the sufferings due to it are often very acute; the pain, however, is generally, although not always, relieved by the appearance of the menstrual flow; a fact capable of easy explanation, for the loss of blood relieves the congestion which exists, just as it would a similar condition in any other part of the body. In this form, the uterus, or at least its lining membrane, is in a state of chronic inflammation; sometimes also there is associated with it an unhealthy condition of the cervical canal; sexual intercourse is often painful in consequence of extreme sensibility of the cervix, a not uncommon result of chronic inflammation of that part of the womb. In the spasmodic form of dysmenorrhœa the pain is nearly always referred to the back, or to the lower portion of the abdomen. In inflammatory dysmenorrhœa, on the other hand, it is often most intense above the pubes, and is sometimes felt along the edge of the false ribs, generally on the left side, shooting up to the shoulder, and down to the ovary on that side.

Now to what is all this suffering due? Are we to believe, as is held by many, that it is caused by retention of the menstrual discharge and consequent distension of the uterus by fluid? a result supposed to be due to the closure of the os internum by the swelling of the mucous membrane, which occurs in consequence of the venous congestion always present at the commencement of each menstrual period. That this may be a cause of painful menstruation I admit, but that it is a very frequent one I much doubt. The history of the following case is very instructive, and bears on the point under consideration. The patient, a lady, aged twenty-eight, who had borne five children, the youngest but fifteen months old, came under my

care some time ago ; her sufferings dated back several years, during which time she had been twice confined. For two or three days before the menstrual period, which always recurred regularly, she suffered from pain over the uterus, shooting up under the left breast and round to the back. This was very severe during the first day of the flow, then it gradually subsided, and she enjoyed comparative ease for a time. Sexual intercourse had been for a long time attended with pain. She did not complain of the introduction of the finger into the vagina, but the moment it touched the cervix, she cried out, stating, however, that the pain this caused was quite different from that experienced at the menstrual period. The sound passed with the greatest facility through the os internum, but though there was no obstruction to its passage, the moment it reached that point, she suffered the greatest agony, and while previous to the examination she had been free from discomfort, she, at this instant, experienced a severe paroxysm of pain, similar to that from which she suffered so much during the menstrual period.

Now this case throws some light on at least one variety of inflammatory dysmenorrhœa. No obstruction existed here, yet menstruation was excessively painful, and paroxysms of pain, exactly similar to that suffered during menstruation, were caused by the passage of the sound through the os internum. I believe that this patient was the subject of chronic endometritis ; that the lower portion of the cavity and the os internum was specially engaged ; that when the uterus became congested, as it does at each monthly period, this inflammatory condition being necessarily aggravated, caused the acute pain from which she suffered, and that this was relieved, when the flow set in, as other congestions are relieved, by local depletion. I think further, that the sufferings experienced by many women at each catamenial period are not mechanical, but are due to congestion of the portion of the lining membrane of the

uterus indicated, the congestion occurring at the menstrual period, rendering acutely sensitive a part which, though in an unhealthy state, was not before the seat of pain. It is quite possible, and indeed very probable, that the swelling and thickening of the mucous membrane, which takes place when this congestion occurs, may in numerous cases be sufficient to close the os internum, and thus actually oppose a mechanical obstruction to the exit of the menstrual discharge ; but I cannot concur in the commonly held idea, that it is the general cause of painful menstruation, or agree with Dr. Marion Sims, who says " that if there be much pain either preceding its eruption or during the flow, there will generally be a physical condition to account for it, and this will be of a nature to obstruct mechanically the egress of the fluid from the cavity of the womb. The obstruction may be the result of inflammation and attendant turgescence of the cervical mucous membrane, whereby this canal becomes narrowed merely by the tumefaction of its lining coat ; but by far the most frequent cause of obstruction is purely anatomical and mechanical."

Now in the case I have just alluded to, the canal of the cervix was so patulous that I do not think it possible the lining membrane could swell to such an extent as to close the passage ; and if the patient's sufferings were in this case due to mechanical causes, why should the passage of the sound reproduce so exactly the pain of the menstrual period ? In my opinion it was caused by the os internum being in an unhealthy condition, and that therefore anything which increased the existing irritation, whether that were the passage of the sound, or the congestion consequent on the approach of the menstrual period, equally caused pain ; in fine, while admitting the mechanical theory as serving to explain the symptoms presented in a certain proportion of cases of dysmenorrhœa, I deny that it does so in the majority.

The occurrence of congestion and inflammation causing dysmenorrhœa is of course well known, and in the foregoing remarks I merely desire to point out that in my opinion the seat of pain is in such cases at, or immediately beyond, the junction of the body with the cervix uteri; that the cause of the pain in many instances is endometritis, and that it is not necessarily due to any actual obstruction to the exit of the menstrual discharge. I may add that in the case just alluded to, local depletion and the subsequent application of the fuming nitric acid perfectly cured the dysmenorrhœa.

The treatment of inflammatory dysmenorrhœa includes three indications.

1st. Removal of all causes keeping up the existing irritation. Foremost among these is the abstinence from sexual intercourse; for not only does the act itself generally cause pain, and therefore must be injurious, but the occurrence of conception is to be specially avoided, for till the patient is cured, abortion is very liable to occur, to be followed by aggravation of her symptoms. Riding on horseback, fatiguing walks, or even household occupations which necessitate much standing, should be given up, while the occurrence of constipation is to be carefully guarded against.

2d. Relief of the uterine congestion. By local depletion, either by means of leeches applied before the menstrual period, or by puncturing the cervix uteri and encouraging the bleeding—this latter treatment you have seen me carry out repeatedly with considerable benefit. It is not suitable in the cases of young unmarried girls, as it necessitates the use of the speculum. In them leeches should be applied to the inside of the thighs, or to the verge of the anus, but in married women to the cervix uteri itself; mild purgatives should also be administered from time to time. When by these means you have succeeded in relieving the congestion of the uterus, considerable

benefit will be derived from blisters applied over the sacrum, or to the abdomen a little above the pubes.

3d. Excitement of healthy action in the uterine mucous membrane. If the case be of long standing, and that the symptoms though relieved, do not entirely disappear, showing that a certain amount of endometritis still exists, I recommend you to cauterize the cervical canal, and sometimes even the whole interior of the uterus, with carbolic acid, or, in many cases, better still, with strong nitric acid. I shall on a future occasion explain to you the mode of carrying out this safe, and indeed painless treatment.*

I have met with but little benefit from the exhibition of medicines in inflammatory dysmenorrhœa. Where ovarian excitement exists, bromide of potassium, in twenty or thirty grain doses, three times a day, does good; the bichloride of mercury in small doses, and continued for a considerable time, has been recommended by several writers; for myself I must say it has disappointed my expectations. Purgatives, especially the saline, seem to me the only medicines capable of producing real benefit; these, to do good, should be exhibited just before the menstrual period.

It remains for us to consider those forms of dysmenorrhœa which depend on mechanical causes. Of these there are three varieties, namely, those in which the cervical canal is so flexed as to obstruct the escape of the menstrual discharge; secondly, those in which inflammation or congestion of the lining membrane exists to such an extent, as to cause temporary inclosure of the canal or of the os internum; and thirdly, those in whom from some congenital malformation or acquired cause, the os internum or the cervical canal throughout its entire length is permanently narrow and constricted. To this last may be

* See Lecture XVII.

added those cases in which fibrous tumors are met in connection with and often causing dysmenorrhœa.

Painful, or difficult menstruation, is frequently observed in women in whom the uterus is flexed; but though flexions of the uterus may, and certainly do, interfere with the exit of the menstrual flow, they seldom do so unless the flexion be complicated by the existence of chronic inflammation, or the presence of a fibroid. In such cases we should certainly endeavor to relieve the flexion, and see if by replacing the fundus in its normal position, and supporting it there by a pessary, we can relieve the patient before having recourse to surgical means. Cases of dysmenorrhœa are not unfrequently met with in women who, although married, are sterile, and in whom flexions of the uterus exist, menstruation prior to marriage having been a painless function. In the majority of these cases I believe the flexion to have been congenital, and that marriage to them was a positive evil; producing congestion in a malformed organ, and giving rise in turn to a long train of distressing symptoms. In these cases the uterus is generally anteфлекted, and division of the cervix becomes essential to their successful treatment.

I have already so fully explained my views as to the chief cause of the dysmenorrhœa in cases of inflammatory swelling of the lining membrane of the uterus, that I have but to repeat that, though not in my opinion of frequent occurrence, cases are met with in which the os internum, or some portion of the cervical canal, becomes so narrowed in consequence of the tumefaction of the parts, as to present a mechanical impediment to the discharge of the menses. In such cases, if the treatment I have already recommended fail, I have no hesitation in having recourse to surgical measures with the view of procuring relief; indeed it is obvious that an operation which divides the cervix, so freely as does that introduced

by Sir James Simpson, must be calculated to give permanent relief to the congested organ. I only say again that the

FIG. 6.



Dr. Priestly's
Dilator.

operation should not be had recourse to till other means have failed. I may here take the opportunity of saying once for all, that I object to the use of any of the means which have been suggested for the purpose of dilating the cervix in the treatment of dysmenorrhœa. Several cases of severe inflammation, and even of death, are recorded as having followed such an attempt.

Moreover, this mode of treatment, whether carried out by means of metallic dilators or by sea-tangle bougies, is in other respects also objectionable. It is slow, painful, and most uncertain in its results; for the cervix after a time nearly invariably contracts, and the patient relapses into her former unsatisfactory state. Of all the instruments devised for the purpose, Priestly's Dilator (Fig. 6) is probably the best. I have used it in cases in which difficulty occurred in getting a sea-tangle tent through a very narrow os internum; but even then, I only expanded the dilator to a very trifling extent. Now I never employ it.

A contracted os, looking almost like a pinhole, and leading up to a narrow cervix uteri, is not unfrequently seen; this condition is almost invariably associated with sterility, and very often with dysmenorrhœa also. You saw last week a very good example of this in the case of the young woman who sought relief for the latter affection. Menstruation is with her both painful and scanty; the os uteri is so small as hardly to admit the point of a probe; and there can be no doubt but that the cervical canal is unduly

contracted. I think such cases as hers are fair subjects for operation, for no other treatment will be productive of permanent benefit; but beware of holding out hopes to your patient, that by submitting to the operation she will gain more than relief from the suffering caused by the dysmenorrhœa. When the operation has been performed simply for the cure of sterility, it has in general, as far as my experience goes, resulted in disappointment; in other words, division of the cervix is in my opinion a legitimate proceeding, if performed with the view of curing dysmenorrhœa, but it is seldom justified in cases of simple sterility; because the narrow os and contracted cervical canal are not the cause of the sterility, but merely an index of some congenital condition or defect in the uterus itself which hinders conception. What that defective condition may be we may not be able to decide.

But the patient I have just alluded to is averse to undergoing any operation, and I have, therefore, introduced a slender and short-stemmed galvanic pessary. She has worn it for three weeks, and it has already been productive of marked benefit; for she tells you, that during the menstrual period which has just passed, she was free from pain, and that the flow continued for five instead of two days.* You saw that I had some difficulty in introducing it, mainly because the uterus is slightly antelected. I had accordingly to expose the os with the duck-bill speculum, then to seize and draw down the cervix with a fine hook, and while the womb was thus fixed, slip in the stem of the pessary. You must always adopt this method when difficulty occurs in the introduction of these instruments.

* This patient continued for some time to derive relief from wearing the pessary, but on removing it all her bad symptoms returned; therefore, after the lapse of many months, I decided on dividing the cervix. The operation proved successful.

I have known much good to result in such cases as the foregoing from this simple treatment; it is at least worth trying before advising that an operation should be performed.

The use of the stem pessary is also sometimes indicated, where painful menstruation exists, with either retroflexion or anteflexion of the uterus; for the stem not only renders the canal patulous, but, by straightening the cervix, favors the escape of the discharge. Unfortunately a certain amount of endometritis commonly exists in such cases, and this frequently prevents the stem being tolerated. To meet this difficulty, Dr. Greenhalgh has invented a soft, flexible stem pessary,* made of india-rubber, that can sometimes be worn with comfort when a rigid one could not be borne.

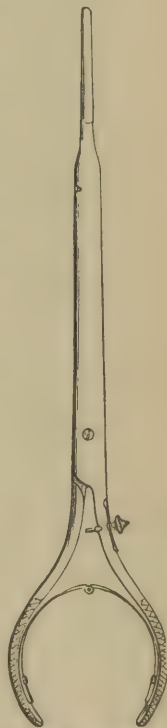
But a large percentage of the cases we meet with in practice derive no permanent benefit whatever from any form of palliative treatment, nor can any favorable result be anticipated, because some portion of the cervical canal, either at the os internum, or throughout its entire length, is contracted. In some patients the cervix is conical, and terminates in a very small circular os uteri, "the pinhole" os uteri, as it is termed, the cervical canal being generally much contracted. Dr. Barnes is of opinion, that in such cases the obstruction is mainly due to the small size of the os itself: he consequently rests satisfied with an operation which divides the cervix, but does not divide the os internum. I much doubt, however, if the os internum is ever of its normal size where the os externum and cervical canal are contracted. Certainly the exceptions to this being the rule must be rare. I, therefore, in all cases, divide the os internum as well as the os externum and vaginal portion of the cervix.

Now, with respect to the operation itself, we are indebted

* Manufactured by Arnold & Sons, 34 West Smithfield, London.

for its introduction to Sir J. Simpson, who for a time practiced it very extensively, though I believe that before his death his views on this point were considerably modified, and that he did not perform it nearly so frequently as he had done at an earlier period of his career. His method of performing the operation was by passing an instrument termed a *bistourie caché* through the canal of the cervix, and within the os internum. It contained but one blade, which, when the instrument had penetrated to the requisite depth, was made to protrude, the extent of the protrusion being regulated by a screw. The incision commenced at the os internum, and as the instrument was withdrawn it incised gradually and more deeply the substance of the cervix, until it divided the vaginal portion quite through; the instrument had then to be turned, re-introduced, and the other side divided in like manner. This re-introduction is very objectionable, and consequently various knives (metrotomes) have been invented with the view of obviating it. Those proposed by Dr. Savage and Dr. Greenhalgh are both good instruments. I generally use the former (Fig. 7). It is furnished with two blades, the cutting edge of each being directed outwards; and as the back of each blade, when the instrument is closed, projects beyond the cutting edge of its fellow, which it thus overlaps, its introduction into the cervix can be safely effected. It is sometimes necessary to dilate the cervical canal a little before this step can be effected; one piece of sea-tangle

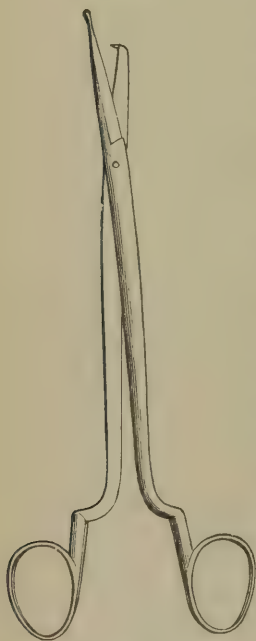
FIG. 7.



Dr. Savage's Metrotome.

will, however, open the canal sufficiently for the purpose. Having exposed the os by means of the duck-bill speculum and seized one lip with a hook, so as to steady the uterus, you proceed to

FIG. 8.



Kuchenmeister's Scissors.

introduce the metrotome, taking care that it does not pass unnecessarily far into the uterus; the blades are then expanded, laterally, slowly, and only to the limited extent previously decided on, and which is regulated by means of the screw affixed to the handle of the instrument; for if this precaution be neglected you will divide the os internum too deeply; a proceeding which may cause alarming hæmorrhage, and is nearly certain to be followed subsequently by such great eversion of the lips of the womb, as to leave the neck patulous and gaping to an excessive degree. This condition exists in a patient at present under my care, who was operated on by Sir J. Simpson many years ago. The metrotome, the blades being kept expanded, is now withdrawn; I think it better not to divide the vaginal portion of the cervix with them, but

to complete this part of the operation subsequently by means of the scissors (Fig. 8).

With this object, the longer blade, which terminates in a probe-pointed extremity, is introduced into the cervical canal and through the os internum, the other blade is applied laterally, to the vaginal portion of the cervix; the part included between them is then to be divided by the closure of the blades.

When one side of the cervix has been divided the blades have to be turned, and the other side divided in a similar manner. My reasons for completing the operation in the manner described are, that to enable the blades of the metrotome to cut through the vaginal portion of the cervix, they must be expanded to a degree which, without great care, may permit of their incising the os internum to a dangerous extent; while even when so expanded, a sufficient division of the lower segment of the cervix is not always made, and, moreover, the risk of hæmorrhage occurring is much lessened, if not indeed altogether avoided, by following the method I adopt.

Dr. Greenhalgh's metrotome (Fig. 9) is preferred by many. It was, I believe, the first bilaterally cutting metrotome invented, and is very ingeniously constructed. By it the entire operation is completed at once. It is easy of introduction, cuts laterally outwards, and the extent of the incision can be regulated with great nicety.

FIG 10.



Blades Expanded.

Dr. Marion Sims varies the operation by dividing first one, and then the other side, of the vaginal portion of the cervix with a pair of bent, narrow-bladed scissors; he then presses a narrow-bladed knife through the os internum, and cuts from within outwards.

The operation of dividing the cervix uteri is not absolutely devoid of danger, and it has, though not in my practice, been followed by fatal results. But I have known very alarming hæmorrhage to occur both at the time, and also some hours subsequently.

FIG. 9.



Dr. Greenhalgh's Metrotome closed.

You should, therefore, be always prepared for this contingency, and be provided with a solution of the perchloride of iron in glycerin. With this I was formerly in the habit of

invariably brushing over the divided surface. I have now given up the practice, because I find if the operation be performed in the manner I describe, there is little if any risk of hæmorrhage; but should hæmorrhage occur, a pledget of cotton saturated with it should be inserted into the cervix, and the vagina then plugged. The operation itself seldom causes pain, and, if the woman be healthy, the chance of inflammation following is not great; still extreme care should be taken to guard against such occurring, and she should be kept in bed several days. There is often a great tendency in the incisions to unite; to prevent this, Dr. Coglan suggested the insertion of a thin roll of lead; this answers the purpose very well. It is sometimes necessary to introduce and leave in the cervix an expanding spring stem, as suggested by Dr. Greenhalgh (Fig. 11). Dr. Graily Hewitt recommends, with the view of preventing contraction, and at the same time

FIG. 11.



Dr. Greenhalgh's
Expanding Stem.

of keeping the canal straight, that the patient wear for some time subsequently an ebony stem pessary, a proceeding which in many cases would doubtless be useful. But in general these precautions may be dispensed with. I prefer, in the few cases in which I find anything of the kind necessary, to introduce one of Greenhalgh's flexible stem pessaries, but, as a rule, I content myself with passing the uterine sound almost daily for at least two or three weeks subsequent to the operation, and at inter-

vals for some time longer. I find this to be usually sufficient to prevent the divided surfaces from uniting.

Although I have warned you against performing the operation of dividing the cervix uteri unnecessarily, I feel equally bound to impress on you the necessity of carrying it out whenever suitable cases occur in your practice. It is not merely that by doing so you afford your patient the best chance of escaping from constantly recurring pain, although that alone in many cases is a sufficient reason for having recourse to so safe an operation, but, moreover, long-continued dysmenorrhœa is likely to produce very grave consequences. Sterility, metritis, and endometritis terminating in permanent enlargement of the uterus, and perhaps giving rise, in addition to other distressing symptoms, to the occurrence of profuse menorrhagia, may follow, until the patient, worn out by long-continued suffering, becomes a confirmed invalid, or sinks into a state of morose despondency. Such most likely would have been the result in the case of the young girl, M. W., on whom you saw me recently operate. Her sufferings, for several days at each menstrual period, were extreme; she would roll on the floor in agony, and this had been the case since the first appearance of the catamenia, three years previously. On examining her I found the cervix uteri to be abnormally small, and apparently imperfectly developed. Much difficulty was experienced in introducing the sound, so contracted was the cervical canal; and indeed it required the exercise of some skill to detect the os uteri, it was so exceedingly small. We found it necessary to dilate the cervical canal in this case, with a tent of sea-tangle, before attempting to introduce the metrotome. The result of the operation has been very satisfactory, for the girl has ever since enjoyed freedom from the excruciating pain she had previously periodically suffered. I should add that I had tried the effect of a stem pessary with her before having re-

course to the operation, but she could not tolerate its presence.

I have hitherto spoken of the operation of division of the cervix with reference to those cases only in which the cervical canal though contracted is straight. I recommend a different operation when the uterus is anteflexed, namely, the division of the posterior wall of the cervix only. This procedure, in the class of cases now under consideration, is strongly urged by Dr. Marion Sims, of New York, and after an extended trial I unhesitatingly confirm his experience of its being far the most satisfactory in its results. In performing this operation the steps are reversed, the cervix being exposed, and the anterior lip fixed by means of a tenaculum; the probe-pointed blade of Kuchenmeister's scissors (Fig. 8) is introduced into the cervical canal, and the posterior wall is divided up to the os internum. The os internum is then to be divided to a limited extent, by a knife with a very narrow blade, the parts being kept from healing, as in the other operation, by the daily introduction of the uterine sound. I cannot speak too highly of this operation in cases of endometritis, occurring in nulliparous women in whom congenital anteflexion exists, giving rise, as is nearly invariably the case, to dysmenorrhœa; but I shall have to recur to this subject when speaking of the treatment of endometritis.

LECTURE V.

MENORRHAGIA—DEFINITION—CAUSES OF—CONSTITUTIONAL AND LOCAL
—SUBINVOLUTION—TREATMENT OF—UTERINE PORTECAUSTIQUE—
PLUGGING VAGINA.

I PROPOSE to-day, gentlemen, to draw your attention to the subject of menorrhagia; one of the greatest importance, both on account of its frequency and of the serious consequences which follow its occurrence.

The term "*Menorrhagia*," strictly speaking, means profuse menstruation; the ordinary menstrual period being prolonged, or the quantity of blood lost during a menstrual period of average duration being in excess of what is normal. In general both these conditions are present, the period being prolonged, and the quantity of blood lost being excessive; but we not unfrequently meet with cases in which a discharge of blood takes place from the uterus during the interval between the menstrual periods; to such attacks of hæmorrhage the term "*Metrorrhagia*" is by some applied.

Let me first of all impress on you that menorrhagia is not a disease; it is only a symptom of a diseased condition, whether it be of the system at large, or of the organs of generation. It is, therefore, incumbent on you, in dealing with every case of menorrhagia which may come under your observation, to endeavor to determine, before you attempt to treat it, on what that symptom depends. I know of no affection in the treatment of which professional character is so frequently

lost, from want of due care in attending to this important point.

Thus, within the last few days I was consulted by a lady who for three years had been the subject of profuse menorrhagia, during the whole of which period she had been under the care of a surgeon in extensive practice. He had prescribed iron and astringents in various form without benefit, but he never once made, or even suggested, a vaginal examination. I found that the menorrhagia depended on the presence of a large intra-uterine polypus; but the discovery of the cause was in this case made too late. She sank from sheer exhaustion, and died before the polypus could be removed; had the diagnosis been made but a few months earlier, a valuable life would have been saved.

Now the causes on which *Menorrhagia* may depend are twofold—constitutional and local. I shall speak briefly of the former class first, and subsequently enter at length into the consideration of the latter, as being those which are more immediately within the province of the obstetric physician. The general constitutional causes which predispose to menorrhagia are not very numerous, nor is their influence very distinctly marked. The following are the most common:

(1.) Debility arising from any cause, but more especially if the result of prolonged lactation is, I think, the constitutional cause on which menorrhagia most frequently depends. In such cases it often assumes a very aggravated form. Thus a delicate woman continues to nurse, although menstruation has reappeared, and the patient, weakened by the double drain, rapidly loses health and strength. In such cases, if nursing be given up altogether and tonics be administered, of which strychnia alone or combined with iron, is generally the most useful, a rapid improvement in the general health, and a

marked diminution in the quantity lost at each monthly period, often follows.

(2.) Profuse menstruation is seen in young women of full habit but of lymphatic temperament. I have met with several well-marked instances of this; in one especially the tendency to menorrhagia was so great and so difficult to restrain, that on more than one occasion I feared that as a last resource I should be compelled to plug the vagina. This patient was quite a young girl, who looked the picture of health. In her case, the only remedy which seemed to exert any decided influence in checking the great loss was the application of Dr. Chapman's hot-water bags to the spine—a mode of treatment well worthy of a trial.

(3.) Again, as age advances and the climacteric period of life approaches, women are liable to menorrhagia, sometimes of a very aggravated character. Not unfrequently some months elapse without the normal discharge appearing, and then it comes on so profusely as to give rise to the suspicion that pregnancy had existed and had terminated by abortion. The same train of symptoms is not very unfrequently met with in recently married women; from the non-appearance of the catamenia at the regular period, they naturally believe themselves pregnant, till after the lapse of some weeks, they are undeceived by the return of menstruation in an aggravated form; in both cases, the cause is probably the same—namely, temporary congestion of the uterus, and probably, of the ovaries. The administration of mild saline purgatives, and in the former class of cases, if the attacks recur, the exhibition of ergot and strychnia will generally check the excessive loss, or prevent its recurrence.

(4.) Disease of the heart is sometimes attended by menorrhagia. This evidently depends on congestion, the results of

the retardation of the return of the blood to the right side of the heart, and occasionally the loss of blood in these cases seems to give temporary relief. A good example of menorrhagia depending on this cause, was seen in the case of a woman, long under observation in this hospital, who for years labored under mitral obstruction, and in whom the attacks of profuse menstruation sometimes assumed an alarming aspect.

(5.) Analogous in nature to the last-mentioned class, are those cases which depend on chronic hepatic disease, or hepatic congestion. However, as alluded to in another lecture, hepatic congestion may cause a diminution, rather than an increased flow, of the menstrual discharge.

(6.) Menorrhagia, too, is met in connection with that form of renal mischief known as Bright's disease, due to the blood being in this disease deprived of its albumen, and consequently in a condition favorable to exudation through the walls of the capillaries; but all these affections fall within the province of my colleagues rather than of mine, and I must therefore leave you to learn from them the mode in which menorrhagia depending on these causes should be treated.

The local conditions causing profuse menstruation are numerous and very important; they are:

1. Subinvolution of the uterus.
2. Granular erosion of the os and cervix uteri.
3. Inflammation and congestion of the membrane lining the cavity of the uterus, and a granular condition of that membrane.
4. Retention within the uterus of a portion of the placenta or of the foetal membranes.
5. Congestion of the uterus and ovaries.
6. Polypus of the uterus.
7. Fibrous tumors of the uterus.
8. Inversion of the uterus.

This is a long list, and yet the lesions enumerated in it are all, with the exception of inversion, of frequent occurrence, and all frequently cause menorrhagia. Indeed I think we should add cancer to the list. Some authors, no doubt, object to cancer being considered as a cause of profuse menstruation, and in the majority of the cases of this terrible disease, the discharge to which it sooner or later gives origin, is not in any way connected with menstruation, and therefore to term it menorrhagia is incorrect; but in other cases, especially in those of epithelioma, menstruation is, in the first instance, augmented, and the term is then correctly applied. I think therefore that it is better to speak of cancer as a possible cause of menorrhagia. I shall now proceed to call your attention to each of the foregoing conditions somewhat more in detail.

Subinvolution of the uterus is a far more common cause of menorrhagia than is generally supposed; indeed, in married women, or in those who have been at any time pregnant, profuse menstruation is probably more frequently dependent on this condition than on any other.

When we speak of subinvolution of the uterus, we mean that the process by which the womb regains its original size subsequently to delivery, or abortion, has been from some cause retarded or arrested; this process has been termed involution, and when it is incomplete we talk of the uterus as being in a condition of imperfect involution, or more commonly, of subinvolution.

The involution of the uterus should be completed within a few weeks after the date of delivery. It is one of the most remarkable phenomena which occur in the human body. The uterus, immediately before the expulsion of the fœtus, measures about fourteen inches in length, and weighs twenty-five ounces, often indeed, even more. Immediately after its size is diminished to considerably less than one-half its former bulk,

its weight being proportionally reduced ; while, if the process proceed regularly and unchecked by any cause, the womb will, after the lapse of five or six weeks, be less than three inches in length, and weigh but two ounces. The first step in this process is, that the supply of blood to the uterus is checked and the circulation of blood through that organ interrupted, by the contraction of the muscular fibres of the uterus, a process which commences the moment labor terminates, and goes on in a more or less painless manner for some days subsequently ; while at the same time fatty degeneration and disintegration of tissue, on the one hand, and absorption on the other, rapidly complete the work of reducing the uterus to its normal size, and restoring its compactness of tissue.

But you can easily understand that numerous causes may interrupt this process ; thus in weakly, debilitated women, the uterine contractions may not be sufficiently powerful to check the blood supply, consequently the nutrition of the organ may continue almost as active as previous to delivery, and accordingly the uterus will remain in a state which may be considered as one of permanent hypertrophy. Instances of this are very numerous. A similar result may follow in a healthy, muscular woman if she leave the recumbent posture too soon after delivery, and, as many of the lower orders do, return to her ordinary occupations, long before the uterus has regained its normal size. Again, pelvic inflammation in any of its varieties is a common cause ; interrupting, and often arresting, the involution of the uterus. Subinvolution may follow on abortion, even when it occurs in the early months of pregnancy, a fact you should not overlook ; indeed my experience leads me to think it is more likely to occur after abortion than after labor at the full term. But from whatever cause arising, subinvolution sooner or later gives rise to very troublesome and distressing symptoms of which menorrhagia is the

most prominent and alarming, the one, too, for the relief of which we are most frequently consulted.

I cannot better exemplify this affection, than by calling your attention to the case of C. D., who is still in hospital. She is forty-three years of age, has had six children. Her health has never been good since the birth of the last, ten years ago, shortly after which she noticed that menstruation was much more profuse than formerly; for a long time back each period had lasted for not less than ten or twelve days, returning after an interval of only a fortnight. On admission she complained of debility, of great pain in her back, of irritability of the bladder, and consequent straining and tenesmus, she also suffered from profuse leucorrhœa. The effects of this long-continued drain was manifest in her appearance; you must have remarked how perfectly exsanguine she was. I expressed the opinion from the history of the case, dating as it did from immediately after labor, that the menorrhagia would probably be found to depend on subinvolution, and that the irritation of the bladder was reflex, depending on an unhealthy condition of the mucous membrane lining the uterus, which would probably be found to be rough and granular; this opinion was confirmed by the fact, that the os and cervix uteri were healthy, while the sound proved that the cavity of the uterus was elongated to the extent of about three inches. I shall by and by refer to the treatment you saw me adopt in the case; for the present it is sufficient to say, that she will leave the hospital in a day or two, after a stay of but three weeks, cured of an affection of ten years' standing.

But the mischief resulting from imperfect involution of the uterus does not end here, for this abnormal state of the womb predisposes to the occurrence of that unhealthy condition

known as granular erosion of the os and cervix uteri, a condition which greatly augments the tendency to menorrhagia; thus the two causes which I have placed at the head of the list may be present in the same patient. The case of M. F., recently under our observation, afforded a well-marked instance of this. She has had twelve children, and is now forty-eight years of age. She stated, that ever since the date of the last confinement, six years ago, menstruation had gradually become more profuse, the flow continuing for a longer time than usual, the interval between the periods being correspondingly shortened. During the interval she suffered from profuse leucorrhœa, and was, as a result, greatly debilitated.

On examining her, extensive abrasion of the vaginal portion of the cervix uteri was found to exist, the os was patulous, the lips everted, and the mucous membrane lining the cervical canal could be seen in a thickened, highly vascular condition; the uterine sound penetrated to the depth of three and a half inches. This patient, too, was discharged after a residence of a few weeks in the hospital, perfectly cured. She occasionally appears among the out-patients, but not from any return of the menorrhagia. I treated both these cases alike, with most marked success, by the application to the interior of the uterus of the fuming nitric acid, in a manner I shall hereafter explain at length.

In the foregoing case, subinvolution was manifestly the primary cause of the menorrhagia, the erosion being altogether secondary; but often subinvolution exists alone or, on the other hand, erosion may exist alone, either condition being fully sufficient to give origin to severe menorrhagia. As an instance of the former, the following serves for an example: F. L., æt. twenty-four, a delicate young woman, of lymphatic temperament, married about a year, had always menstruated profusely, especially if she took walking exercise, or exerted

herself during the flow. She became pregnant after the occurrence of the second menstrual period, subsequent to her marriage, but, having imprudently taken a long and fatiguing walk, aborted at the eighth week. The two subsequent menstrual periods were so profuse as to reduce her to a state of extreme debility. Ergot, gallic acid, and numerous other astringents were administered, but they failed to check the hæmorrhage. On examining her, I found the uterus considerably elongated, the sound passing to the depth of more than three inches; there was not any abrasion of the lips of the os uteri. The history of the case being altogether against the supposition of the existence of a polypus, I came to the conclusion that the menorrhagia depended on subinvolution; in fact, that the uterus had never regained its normal size and tone since the miscarriage which had taken place two months previously. I therefore decided on carrying out a plan of treatment, the value of which you have had, in the wards of this hospital, repeated opportunities of judging, I mean, the introduction up to the fundus of the uterus of ten grains of the solid nitrate of silver, which is left to dissolve there. This I accordingly did. It produced considerable pain, which lasted for five or six hours, but no further unpleasant results followed. I confined the patient to bed for three days, and then allowed her to go about. Menstruation appeared at the regular time, and was moderate in quantity. She became pregnant immediately after, and went to the full term of utero-gestation.

I wish to call your attention to this case, first, as illustrating the occurrence of subinvolution as a result of abortion; a fact, which, though mentioned by Sir J. Simpson, has been overlooked by many; next, as showing that dangerous hæmorrhage may result from this condition of the uterus; and, thirdly, as proving the excellent results which follow the treatment I adopted. This point I wish specially to impress on

you. You will find that ergot, gallic acid, and indeed all other medicines, will frequently fail to check menorrhagia depending on subinvolution, and that you must have recourse to treatment directed to the uterus itself. You must stimulate

FIG. 12.



Uterine Porte-caustique.

the organ to set up that healthy action by which it regains its normal size after pregnancy has terminated, a process to which, as I have already told you, the term "involution" is applied. With this view, I unhesitatingly advocate, in suitable cases, the adoption of the treatment I practiced in this case. The mode of carrying it out is simple. You introduce the instrument, which I now exhibit (Fig. 12), into the uterus, just as you would an ordinary uterine sound. It is Sir James Simpson's "Uterine Porte-caustique." It consists, as you see, of a hollow silver tube, in size and shape closely resembling a sound, and containing a flexible stilette which fits it accurately. As soon as you are satisfied that the point of the instrument has reached the fundus of the uterus, you withdraw the stilette, and push up by means of it, through the tube, a piece of solid nitrate of silver, reduced to the requisite size and weight, until it is fairly lodged in the cavity of the uterus. In doing this there is but one caution requisite, namely, that as soon as the piece of nitrate of silver has reached the

extremity of the portecaustique, and before it is finally pushed out of the instrument (a point you can always be certain of by observing how much of the stilette remains still unIntroduced), you should withdraw the instrument to the extent of about half an inch; for, if this precaution be not observed, it is possible that the nitrate of silver might be forced into the substance of

the uterine wall, instead of being left free in its cavity, an accident which, though possible, is very unlikely to occur.

I have dwelt at some length on this plan of treatment, because I am satisfied that its value is far from being fully appreciated. It is looked upon by many practitioners as heroic and dangerous. I have practiced it freely for several years, and I believe it to be both simple and safe. I do not say that it is always sufficient, and that a cure must always result, but in my hands it has been productive of marked success, and in no single instance have I known it produce serious symptoms. That pelvic cellulitis may, under certain circumstances, follow the introduction of the solid nitrate of silver into the uterus is quite possible, and I should not at any time be surprised at its occurrence; but the fear of this would never deter me from carrying out the treatment, for an attack of cellulitis is of much less importance than the continuance of profuse menorrhagia. Although I have seen cellulitis follow the use of apparently milder astringent applications, it has not as yet occurred in my practice after the introduction of the solid nitrate of silver. This treatment is no novelty. Dr. Evory Kennedy, many years ago, was in the habit of passing solid nitrate of silver into the cavity of the uterus; but he did not allow it to remain there. Subsequently, Sir J. Simpson introduced the method I now advocate, and invented the portecaustique.

In the case I have related, I was asked to see the patient just as the flow, which had continued for nearly a fortnight, ceased to appear, and as a full trial had been given to the ordinary method of treatment without result, and the woman being in such a debilitated condition that a return of the hæmorrhage might be productive of very serious consequences, I seized the opportunity to carry out the treatment just detailed. Had I, however, seen her at an earlier period, I should at once have stopped the loss of blood by plugging the vagina.

This is a mode of arresting the hæmorrhage, which, if properly carried out, is always safe, and, as a temporary means, efficacious. You have seen me practice it repeatedly in our wards. Of course, in an emergency, a sponge or a pocket-handkerchief will answer the purpose ; but, when it can be obtained, nothing does so well as common cotton wadding. It should be cut in strips, the full length of the sheet, and two inches wide, the paper to which the wadding adheres being left attached. These strips should then be introduced one by one, through a speculum, a piece of tape or twine being attached to those first introduced, for the purpose of facilitating removal, the ends of the string being left outside the vulva. As many strips of the wadding as the vagina will contain are in this manner to be introduced, from four to six being usually required, according to the capacity of the vagina. As the strips of wadding are introduced the speculum should be gradually withdrawn, and, when finally removed, the finger should be passed into the vagina and the wadding firmly pressed together, when, if it be found that the vagina is not fully distended with the plug, more cotton should be introduced. If this precaution be not adopted, blood is very likely to ooze out between the sides of the vagina and the plug. Another very good plug is formed by twisting cotton-wool into a rope, and introducing it in the same manner.

The plug thus formed is easily withdrawn, for if the ends of the strips last inserted be laid hold of by a pair of dressing-forceps, which are then to be rotated so as to coil the strips round them, each piece can be extracted in succession without its breaking, while the ones first introduced are withdrawn by means of the strings attached to them.

Any substance left in the vagina rapidly becomes very offensive ; but this can be in a great degree remedied by smearing the wadding or cotton freely with glycerin. The plug should

in all cases be withdrawn after the lapse of twenty-four hours ; to be replaced for a similar period if the hæmorrhage continues. Should you be unable to obtain wadding, cotton or tow will answer the purpose very well. You must, however, be careful to attach a string to each of the rolls first introduced, and to keep the ends outside the vulva, or you will experience some difficulty in removing the plug. This treatment is equally efficacious in restraining hæmorrhage depending on any of the causes I have enumerated as giving origin to menorrhagia, and should always be practiced in severe cases.

In hospital practice, where I have the aid of an assistant, I prefer using the duck-bill speculum when plugging ; but, while its use certainly facilitates the introduction of the plug, the shape in which it is usually made renders its removal, when once the vagina has been filled with the cotton or wadding, a matter of difficulty. In cases of emergency, where no speculum is at hand, one may be extemporized by introducing the handle of a spoon into the vagina, and with it drawing back the perinæum, or the index and middle finger of the left hand may be introduced and made use of to dilate the orifice of the vagina ; for if this be not done by some means, the introduction of the plug is not only a matter of difficulty, but will cause the patient much pain. Dr. Greenhalgh, instead of using sponge or cotton, employs three India-rubber balls, which are made in three different sizes and covered with spongio-piline ; one of these is introduced, collapsed, into the vagina, and then inflated to the required extent ; they are easily introduced and removed, and are worn without discomfort. Dr. Barnes advocates plugging the os uteri itself with sea-tangle or sponge-tents, in preference to filling the vagina with the plug. Doubtless his method is the most efficacious, but the difficulty of effecting it will render its general use unpopular.

You are not, however, to infer that all cases of subinvolution are to be treated on one stereotyped plan, and that in every case you must have recourse to the introduction of the solid nitrate of silver. Many cases will yield to milder though slower methods, especially those in which the muscular tissue of the uterus, being in a very relaxed condition, permits the organ to remain in a state of extreme engorgement; under such circumstances, the frequent abstraction of small quantities of blood from the womb (which should be effected by puncturing the cervix), and the administration of strychnia or ergot, with or without the addition of iron or digitalis as the patient's condition may indicate, will often prove eminently useful. The abstraction of blood by relieving the engorgement, permits the contraction of the muscular fibres of the uterus and favors the action of the ergot and strychnia on them. The case of Mrs. M., who for some time past has been a regular attendant at the out-patient department, affords a good example of this treatment. She has had six children, and her illness dates from a miscarriage which occurred four years ago. She has not been pregnant since, but has suffered from severe pains in the back and loins. Menstruation has gradually become more and more profuse, and now lasts for fourteen days. On examining her, the uterus was found to be much enlarged, the sound penetrating to the depth of three and a half inches; it was also retroflected, and the cervix was soft and engorged. As this patient would not agree to come into hospital, it was necessary to select a mode of treatment which would not interfere with her attending to her ordinary household duties. I accordingly, on May 20th, punctured the cervix with Dr. Hall's lancet-shaped knife; it bled freely. On May 23d, she stated that she felt weak, but much easier, and I introduced a Hodge's pessary to support the retroflexed uterus. From that date, for several weeks, blood was regularly abstracted from

the cervix by puncturing it, and her condition gradually improved. On the 24th of July, I made a note that the catamenial period, which had just terminated, had lasted but seven days, and that the flow was moderate in quantity, the pain in the back much less severe, and that she felt considerably stronger. During the whole of this period she had been taking ten drops of the tincture of the perchloride of iron, three of the liquor strychniæ, and twenty of the liquor ergotæ, three times a day. On the 22d of August she reported that another period had just passed, and that it had only lasted three days; the uterus was now of its normal depth. The simple treatment practiced in this case was eminently successful. The uterus returned to its normal size and menstruation became regular. Doubtless, the treatment extended over four months; but it was carried out under the most unfavorable conditions, for this poor woman continued to perform all her usual household duties, washing, cooking, etc., for her family during the whole time. Had I been able to enforce rest in the recumbent position, her improvement would have been much more rapid. In the foregoing case no application was made to the interior of the uterus, but in the great majority of cases such is necessary, both because the mucous membrane lining the cavity of the uterus is generally in an unhealthy condition, and also because the application of a caustic to the interior of the uterus stimulates the organ to contract. Dr. Playfair advocates for this purpose the use of carbolic acid. I have given this agent an extended trial, and consider it, for general use, superior to perhaps any other. In old-standing cases, or where the lining membrane of the uterus is in a granular condition, carbolic acid is insufficient, and it will be necessary to apply the solid nitrate of silver or the fuming nitric acid. The latter is the agent I generally employ in such cases, applying it through a

platinum canula.* The use of carbolic acid, or indeed of any other intra-uterine application, should not supersede the local abstraction of blood; on the contrary, I recommend you to carry out both methods at the same time; first applying the caustic and then puncturing the cervix before the speculum is withdrawn. Carbolic acid has this advantage over solid nitrate of silver or nitric acid, that its use does not necessitate the confinement of the patient to bed. It may be applied with safety in the case of hospital out-patients, or private patients, whom it may be necessary to treat at your own houses.

As I do not wish to have to refer again to subinvolution, I must diverge for a moment from the subject of menorrhagia, to say, that though profuse menstruation is nearly always an early and common symptom of subinvolution of the uterus, there may be exceptions to this rule, as the following case proves: A young married woman was admitted into one of our hospitals during the past summer for what was supposed to be an ovarian tumor. She had been confined about three months previously of her third child. Hæmorrhage had followed delivery. She also appeared to have been subsequently attacked by some form of pelvic inflammation. She recovered slowly and had not been able to nurse. The lochia ceased to appear during the attack alluded to, and menstruation had not occurred since delivery. On passing the hand over the abdomen, a large movable tumor could be easily felt lying to the left side; it was very painful to the touch. After a few days this woman was discharged from hospital, her case being considered unsuitable for any kind of surgical interference. As, however, she continued to suffer much distress, she presented herself among the out-patients here, when a careful examination, made with

* For directions as to the mode of applying these agents, see Lecture XVII.

the aid of the uterine sound, proved the tumor to be the uterus, much enlarged and elongated; in fact, it was a case of subinvolution, with temporary suppression of menstruation. I admitted her into hospital, and introduced ten grains of nitrate of silver into the uterine cavity in the manner already described. This, as usual, caused some pain for a few hours, but it had the desired effect. It stimulated the uterus to set up the process of involution which the attack of inflammation had arrested, and in a couple of weeks she was discharged, the uterus having almost regained its normal size. When admitted, the sound penetrated to the depth of five inches into the uterus.

Although the mode of treatment I have just detailed, and which you have seen repeatedly carried out in this hospital, is one on which you can rely for the cure of menorrhagia depending on subinvolution, I am far from desiring you to suppose that I advocate its use in all cases. On the contrary, in general I first try milder treatment. That which I generally adopt in the less severe forms, of which so many examples occur among the extern patients, is the application of a strong solution of carbolic acid (two parts of acid to one of spirit), to the intra-uterine surface, carrying it up to the fundus by means of one of Playfair's probes.* With this, if congestion exists, I generally couple local depletion, administering at the same time such medicines as are known to exert an influence on the uterus. Of these ergot is the most reliable; if the patient be anæmic, I frequently give ten drops of tincture of the perchloride of iron, with the addition, in some cases, of three or four drops of the liq. strychniæ three times a day, in an ounce of the infusion of ergot. The addition of ten drops of tincture of digitalis when the heart's action is very rapid is often

* For directions see Lecture XVII.

beneficial. If, on the other hand, symptoms are present indicating the existence of ovarian congestion, I substitute the bromide of potassium for the iron in the mixture. In some cases, arsenic in four-drop doses, taken on a crumb of bread after meals, produces good results. The administration of these medicines should be continued for several weeks.

LECTURE VI.

MENORRHAGIA CONTINUED—GRANULAR EROSION OF CERVIX UTERI—
TREATMENT OF—GRANULAR CONDITION OF CAVITY—TREATMENT
OF—MODE OF DILATING CERVIX—SPONGE TENTS—SEA-TANGLE—
BARNES'S DILATORS—USE OF NITRIC ACID—CURETTE—RETAINED
PLACENTA AFTER ABORTION.

IN my last lecture I dwelt at some length on the subject of subinvolution of the uterus, as bearing on that of menorrhagia which is frequently associated with it, and I mentioned that this abnormal condition of the uterus predisposed to the occurrence of erosion of the cervix; but erosion is often met with independent of subinvolution, and is by itself capable of giving origin to profuse menstruation.

Mere abrasion of the lips of the os uteri is not sufficient to produce menorrhagia, but an unhealthy spongy condition of the cervix is met with, which bleeds on the slightest touch, the surface being granular, the os patulous, and the lips everted, a condition quite capable of originating severe menorrhagia. Thus I recently saw a young married woman, who had never been pregnant, who stated that she had become greatly debilitated by the excessive loss which occurred at each menstrual period. Ergot and astringents had been freely administered, and she had been ordered to inject into the vagina, lotions containing alum and zinc; but this treatment produced no good effect. A vaginal examination proved the existence of extensive granular disease of the os and cervix uteri. Now, in severe cases, such as the one I am referring to, you may rest

satisfied that the unhealthy condition of the mucous membrane extends at least as high as the os internum, and that you will fail to effect a cure unless your treatment reach every portion of the diseased tissue; therefore, with a view of permitting the necessary applications to be made to the whole extent of the cervical canal, I commenced my treatment by introducing two tents of compressed sea-tangle, two pieces being sufficient for the object I had in view, which was not to open the uterus to such an extent as to enable me to examine its cavity, but only to permit me to treat the entire of the cervical canal. I left these pieces *in situ* for twenty-four hours, and on withdrawing them, after the lapse of that time, I cauterized freely the whole of the diseased surface with fuming nitric acid. This did not cause any pain. On examining the os uteri a few days subsequently, I found it in a much healthier condition; the menorrhagia never returned, and although a considerable time elapsed before the uterus regained a perfectly healthy state, still the progress of the case was rapid and the cure perfect, the only treatment subsequently necessary being the occasional application of a twenty-grain solution of nitrate of silver to the os uteri, and, at a later period, of small blisters over the sacrum; finally, not the slightest trace of the erosion remained, and menstruation became in all respects normal.

The foregoing case illustrates the mode of treatment which, as a rule, I adopt. Of course, it is not always necessary to dilate the cervix uteri. If the case be recent, and you can satisfy yourself that the unhealthy condition of the mucous membrane does not extend very high, the use of the solid nitrate of silver, or brushing the part lightly over with nitric acid, may be sufficient; but in the more severe forms of the disease such treatment will prove to be merely palliative, and the only effectual means will be found to consist in what I have advocated, or in the use of agents even more potent than

the fuming nitric acid, which, though it acts rapidly, produces a very superficial slough. In not a few cases recourse must be had to the *potassa c. calce*, or to the actual cautery.* I believe that not a little of the opprobrium which rests on obstetric practitioners for the length of time over which their treatment extends, is due to excessive timidity, and to the use of inefficient remedies.

A condition very analogous to that which we can see in the cervical canal, occurs also in the interior of the womb, as the result of congestion and inflammation of the lining membrane of that cavity; a fact which is often overlooked. Indeed, the majority of systematic writers altogether omit mention of it. Dr. Tanner, in his excellent work on the *Practice of Medicine*, mentions the "existence of an unhealthy pulpy condition of the mucous coat" of the uterus as a cause of menorrhagia. My own experience leads me to conclude that while a "pulpy" condition is rare, chronic disease, producing a rough, granular state of the mucous membrane lining the cavity of the uterus and giving origin to menorrhagia, is far from being uncommon. This condition I believe to be in many respects analogous to that so commonly met with in the eyelid, and you will fail to cure the menorrhagia which it causes, until you have destroyed the granulations on the mucous membrane and restored it to a healthy state, just as you would fail to relieve the ophthalmia depending on granular lids, until you have cured the palpebral affection. I may here take the opportunity of laying down a rule, which I advise you invariably to adopt, namely, whenever you meet with a case of menorrhagia in an otherwise healthy woman, which a careful vaginal examination proves not to depend on erosion of the os and cervix uteri, on an extra-uterine polypus, on cancer,

* See Lecture XVII.

or some other evident cause, that you should dilate the cervix and os internum with the view of determining what the condition of the interior of the womb may be. This I hold to be your manifest duty.

I cannot refrain from quoting the judicious remarks of Dr. Tanner with reference to this subject. He says, speaking of menorrhagia, vol. ii, p. 301: "When a woman suffers from repeated attacks of uterine hæmorrhage, which can only be partially or temporarily relieved by rest, nourishing food, and proper astringents, we may be sure that there is some organic disease of the ovaries or uterus; and though the cervix and body feel healthy to the touch, we can be certain that the bleeding is due to some actual disease; that it is not functional." And further on, after enumerating what these causes may be, he adds: "There is only one plan of treatment which can be adopted with a reasonable hope of success, and that is to dilate the os and cervix thoroughly, so as to permit the removal of the source of evil." I fully indorse these observations.

There are two methods still practiced of accomplishing dilatation of the cervix uteri, the one being with sponge-tents, the other by means of sea-tangle. The former can be made of any required size; it is merely necessary to cut a fine clean sponge into pieces, conical in shape, and of various sizes and lengths; for you should always be provided with several tents of different sizes before commencing the process of dilatation. You should then wrap each piece as tightly as possible with fine twine, commencing at the narrow extremity and winding it on till it reaches the thick end. The pieces of sponge are next to be immersed in a strong solution of gum arabic, and left in it till thoroughly saturated, and then hung up to dry slowly. Before these are used the surface should, after the removal of the twine, be rubbed smooth. A small-sized tent is to be first inserted, a larger one being introduced on its removal, after the

lapse of from six to twelve hours, and the process repeated until the cervix is sufficiently dilated.

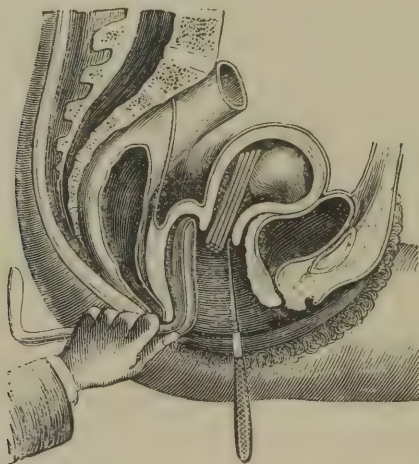
I now seldom use sponge-tents; they are troublesome to prepare, give rise to a very fetid discharge, and are further objectionable, because the mucous membrane lining the cervix sinks into the cells of the sponge, and is consequently lacerated as the tent is withdrawn, and the risk of inflammation occurring is thereby greatly increased. Besides, sponge-tents, from their conical shape, necessarily dilate the os externum the most, often beyond what is required; while the os internum may not be opened even moderately. In fine, in my opinion, sponge-tents should never be used if sea-tangle can be obtained.

Tents made of this substance, technically called *laminaria digitata*, have been in use for some years for the purpose of dilating the cervix. The method first adopted was to introduce one, which, after the lapse of some hours, was withdrawn, and another of greater calibre introduced in its place, the process being repeated till the os internum was sufficiently dilated. This process was necessarily very tedious, besides being objectionable in other points of view. It is now given up, and a modification of it, introduced by Dr. Kidd of this city, adopted in its place. Dr. Kidd's method possesses these three great advantages,—it is comparatively rapid; is cleanly; and lastly, and most important of all, it dilates the canal equally throughout its whole length, except in some cases of rigidity of the os internum, to which I shall allude presently.

Having decided to dilate the cervix, the first step is to expose the os uteri by means of the duck-bill speculum, next to seize the anterior lip with a tenaculum, and with it to draw down and steady the uterus, as shown in Fig. 13. You should previously measure the depth of the uterus, and have ready several pieces of sea-tangle bougies, each piece being nearly the length of the uterine cavity. These you now proceed to intro-

duce; the main difficulty is in the introduction of the first piece, the difficulty being greatly increased if the uterus be retro or antelected. When either of these conditions exist, you had better first introduce the uterine sound, and slipping in some pieces of sea-tangle beside it, withdraw the sound. Short lengths not being so easily manipulated as long ones, I some-

FIG. 13.



POLYPUS (CASE OF M.D.)
Sea-tangle in Situ to effect Dilatation.

times, when difficulty occurs, take an entire bougie and pass it through the os internum as you would the sound, and then slip pieces of the proper length in beside it; for when one piece has been inserted, it straightens the uterus and serves as a guide to the others. When several pieces have been introduced, you can withdraw the long one, or if, before passing it in, you nick it round at a point corresponding with the length of the other pieces, you may be able to break it off, and so avoid the trouble of withdrawing it and substituting another

length in its place. The number of pieces you should insert varies in each case. If the patient have never been pregnant and the cervix is rigid, you will not be able to get in more than two or three; but, if she have borne children, and if the cervix be relaxed, you may succeed in introducing double that number, or even more, without difficulty.

If a small number only have been introduced, it is better to withdraw them after the lapse of nine or ten hours, and introduce a larger number; but if seven or eight pieces have been inserted, they may be left for twenty-four hours before any further steps be taken. The sea-tangle gradually absorbs moisture from the vagina and uterus, and swells, and by so doing forcibly dilates the cervix. This, of course, causes pain, which, however, is seldom very severe, and generally passes off after a few hours. If it continue, I usually direct a morphia suppository to be introduced into the rectum, or twenty grains of the hydrate of chloral to be administered at bedtime.

Dr. Grailly Hewitt, who still advocates the use of the sponge-tents in preference to the sea-tangle, states, as an objection to the latter, that they are liable to slip out. This certainly is true, if you use the short tents which are sold in boxes, but if you use pieces of bougie of the length already specified, and take care that they pass nearly up to the fundus, there is very little chance of their being expelled; I have even on two or three occasions experienced some difficulty in removing them. This has been the case when the os internum was so rigid that it prevented the sea-tangle expanding as freely at that point as it did in the cavity of the uterus and in the cervical canal; the pieces of tangle being thus constricted in the middle, it was necessary to press the index finger of the left hand firmly against the lip of the os uteri, while, with a pair of long forceps held in the right hand, one piece was seized and slowly extracted. These are the cases in which, as just

mentioned, the whole extent of the canal is not equally dilated ; then fresh pieces of the tangle must be introduced, and time given to allow of their expansion before proceeding to explore the interior of the uterus. You will, however, from time to time, meet with cases in which, although the sea-tangle has expanded to its fullest extent, still from the size of the tumor, or some other cause, the os internum is not as large as you would desire. Under such circumstances, I usually complete the process by the introduction of one of Dr. Barnes's dilators. These are india-rubber bags, of a somewhat hour-glass, or rather fiddle shape. They are made of three different sizes. One end terminates in a long slender tube, the extremity of which is furnished with a stop-cock. The dilator is introduced in a flaccid state into the uterus on the point of a staff or sound, or held and compressed between the blades of a pair of long slender forceps, the terminal bulging part being carried by them through the os internum ; water is then to be gradually forced in through the tube just alluded to, and the dilator left in for an hour or two ; by that time it will generally be found to have distended the canal to a considerable extent. The peculiar shape of the dilator prevents it, when once it has been distended, from slipping out of the uterus. Dr. Barnes originally introduced these bags into practice for the purpose of dilating the os uteri in cases in which it was desirable to induce premature labor, a purpose which they often serve admirably ; but their use is now further extended, and we employ them occasionally for the purpose of completing the dilatation of the cervix in the unimpregnated uterus.

You have had frequent opportunities of seeing the process I have described carried out, and must have noticed the entire absence of unpleasant symptoms, after a proceeding so apparently severe as the forcible dilatation of the cervix uteri. I have therefore no hesitation in recommending you to adopt

this course in your future practice, as being one which you have seen productive of such good results in this hospital.

I have never, in my own practice, met with an instance in which unpleasant symptoms followed the attempt to dilate the cervix uteri with *Laminaria* tents; but I am far from throwing doubt on the accuracy of the statements of others, who have recorded the occurrence of alarming symptoms, or even of death, as consequent on this procedure, and I am prepared for the possible occurrence of such, for cases occur from time to time in which the most trifling exciting cause will be followed by serious symptoms; but, as a rule, I believe when these arise, either during the processes, or in consequence of the dilatation, they do so because unsuitable cases have been selected. Therefore, to guard as far as possible against unpleasant results, I lay down for myself the following rules, which I recommend to you for your guidance :

1. Never to dilate the cervix uteri for the cure of dysmenorrhœa or sterility, depending on a narrow cervical canal or conical cervix.

2. Never to dilate where a large and dense intramural fibroid presses on, and partially obliterates the cervical canal. The knife is much safer in these cases.

3. Never to continue the process for more than forty-eight hours. If the cervix be not sufficiently open then, operative interference should be postponed for some weeks.

If you attend strictly to these rules, you will have little to fear in carrying out the process. Of course, if the patient suffer unduly, or that symptoms of inflammation show themselves, it will be your duty to withdraw the pieces without delay, and for the time at least to give up all attempts to dilate the cervix.

I have now explained the way in which dilatation of the cervix is to be accomplished. It remains for me to direct

your attention to the mode in which you are to proceed when, having withdrawn the sea-tangle or sponge tents, you desire to clear up any doubt which exists, and satisfy yourself as to the cause of menorrhagia.

We have, in the vast majority of cases, to rely for this purpose on the sense of touch alone, and must accordingly pass the index finger fairly through the os internum, till the tip reaches the very fundus.* To accomplish this by no means easy matter, it is necessary in the first instance, to draw down and fix the womb; this you effect by seizing the anterior lip of the os uteri with a vulsellum, which you intrust to an assistant to hold, while the fundus should be at the same time pressed down by your left hand, or better still, by that of another assistant; the finger, well oiled, is now introduced slowly through the os internum and swept round the entire cavity of the uterus. You will thus detect the existence of a polypus or a tumor, no matter how small, should either be present, while the educated finger will recognize the rough uneven feel which the mucous membrane, if in an unhealthy granular condition, conveys to the touch.

I have already expressed my opinion, that this condition of the interior of the uterus is probably due to subacute inflammation. This view I believe to be correct; but be the cause what it may, the mode of treatment should be the same, and

* My friend, Dr. Cruise, who has paid special attention to the use of the endoscope, has on several occasions made an examination of the interior of the uterus with that instrument, and is of opinion that in most cases this can be done satisfactorily. In confirmation of which statement I may refer you to Dr. Cruise's paper, in the *Dublin Journal of Medical Science*, vol. lxxviii, for May, 1865, page 333; also to a case recorded by Hayden, in vol. lxxx, of the same periodical, p. 497; to a paper on Granular Endometritis, by Dr. Churchill, in vol. i, of the *British Medical Journal*, p. 2; and to an Essay on the Endoscopic Examination of the Cavity of the Uterus, by Dr. Pontaleoni, of Nice, in the *Medical Press and Circular*, July 14th, 1869.

that is to destroy these so-called granulations, "and endeavor to excite healthy action in the diseased part." With this object, I invariably make use of the strong nitric acid, applying it with extreme freedom to the interior of the uterus. In such cases it is necessary to reach the entire of the diseased surface. I apply the acid by means of a thin layer of cotton, wrapped firmly round a platinum rod; if that is not at hand, an iron wire or the stilette of an ordinary catheter will do. The os is brought into view by the aid of the duck-bill speculum, which protects the posterior wall from any risk of injury, its concavity being smeared with lard to prevent the acid from corroding it, while the anterior wall is guarded by the vulsellum with which the lip is still firmly held; the wire armed with the cotton saturated with the acid is then passed boldly through the dilated cervix, swept round the entire interior of the womb, and withdrawn with a view of protecting the lips of the os uteri and cervical canal from the action of the acid. I am in the habit of using a vulcanite tube, two inches in length, and one-third of an inch in diameter at its lower extremity. This should be passed up to the os internum, and the acid applied through it, or a glass tube may be used for the purpose. The cervix having been previously freely dilated, this can be done without any trouble.*

In cases where the disease is of old standing, and the hæmorrhage has been severe, I repeat the application, passing the stilette, armed with a fresh piece of cotton, saturated with the acid, a second or even a third time up to the fundus, so as to insure the thorough cauterization of the whole inner surface of the uterus. As soon as the cauterization has been effected, and the tube withdrawn, a piece of cotton, soaked in water, should be at once applied to the os, to prevent the vagina being injured by any acid discharge which might issue from

* See Lecture XVII.

the uterus, and then the lip being freed from the grasp of the vulsellum, and the speculum withdrawn, the patient is to be placed in bed.

The subsequent treatment is very simple. Should the patient suffer pain, which she seldom does to any great degree, I order a morphia suppository to be introduced into the rectum, but in the majority of cases this is unnecessary. Indeed, much less pain is caused by this application than by the introduction of the solid nitrate of silver, though the latter would seem the milder treatment of the two. This immunity from pain after application of the acid is very remarkable.

I have only once found it necessary to dilate the uterus a second time for the cure of these cases, but it may be necessary to apply the acid again, if after the lapse of some time menstruation continue to be profuse, a platinum or small vulcanite canula being always introduced, and the acid or other caustic carried up to the fundus through it;* after one or two applications of the nitric acid, carbolic acid may generally be substituted for it.

You can doubtless recall to mind several cases which have been treated by this method during the past session. The following one, at present in the house, serves as an example: J. C., a married woman, æt. twenty-eight, admitted 26th November. She has never been pregnant. Menstruation regular, till within the last few months, when she observed the flow to become much more profuse than formerly, and to last for a greater number of days. Latterly, the interval between each period has been but a fortnight. She has suffered, and continues to suffer greatly, from severe pain over the left ovary and in the back. On making an examination *per vaginam*, the os was found to be relaxed and patulous, the sound penetrated to the depth of nearly three inches, and the fundus

* Fig. 34, Lecture XVII.

appeared to be slightly enlarged. The existence of a small polypus or fibrous tumor being deemed possible, dilatation of the cervix was decided on ; five lengths of compressed sea-tangle were introduced on the morning of the 3d December, but, on withdrawing them next morning, the os internum was found still too contracted to admit of the passage of the finger ; Barnes's small-sized dilator was consequently introduced and maintained in the cervix for a couple of hours. On its removal, I was able to introduce the finger, and to reach the fundus, but neither polypus nor tumor could be detected in the uterus. The inner surface, however, was felt to be rough and uneven ; the entire of this surface was freely cauterized with fuming nitric acid. This patient was subsequently discharged cured.

Such is the treatment I nearly invariably adopt, circumstances, of course, occasionally requiring me to modify it. Were the patient in a very feeble, debilitated condition, I should endeavor, in the first instance, to improve her health, restraining the menorrhagia by plugging, by alum injections, or by hot-water bags applied to the spine, or, if the cervical canal be patulous, perhaps by the injection of hot water at a temperature of 110° ; but this treatment would be altogether palliative, and I should as soon as possible have recourse to the radical plan I have just advocated. In many cases, however, of the affection of which I am speaking it is altogether unnecessary to dilate the cervix, for when satisfied as to the nature of the case you can apply nitric acid or any other agent you may select, through my canula,* without subjecting your patient to that painful process, which is not often needed except when the diagnosis is doubtful.

Two other modes of treatment have been practiced to which it is right I should call your attention ; namely, injection into

* See Lecture XVII.

the uterus of astringent or caustic fluids, and scraping of the inner surface of the uterus with an instrument called the curette. I do not think the former of these modes of treatment either safe or satisfactory. Inflammation of a serious, and even fatal character, has followed the injection of fluids into the cavity of the uterus; and I look on it as a hazardous practice. If any of you, gentlemen, should be induced to try it hereafter, let me recommend you, in the first instance, to dilate the cervix, so that the injected fluid may have a ready means of exit.

As to the curette, its use is, in many cases, a valuable adjunct to our treatment, but it cannot be relied on alone. This instrument is intended to detach any soft bodies which may exist in the interior of the womb; in plain English, the object is to scrape off its lining membrane, and if this has to be done almost at random, it is evidently uncertain whether it effects the object in view or not. Récamier himself, who invented it, advocates the cauterizing of the interior of the uterus with nitrate of silver after the curette has been withdrawn—a clear proof that the use of the instrument even in his own hands proved inefficient. There are just two cases in which, in my opinion, the use of the curette is justifiable, namely, for the removal of a small polypus the size of a pea or bean, which it is difficult to seize with the forceps for the purpose of twisting off, and in those instances, in which, as the result of long-standing disease, the mucous membrane becomes disorganized, and granulations form of such considerable size that it is doubtful whether nitric acid will be sufficiently powerful to destroy them; then their removal by means of the curette, previous to the free application of the acid, is justifiable. But in both cases the cervix should have been previously dilated, and the instrument, if possible, guided along the finger to the

required point. I use the instrument known as Marion Sims's curette.

The retention of a portion of the placenta or of the foetal membranes is too well known a cause of uterine hæmorrhage to need more than a brief notice. Not long since we had in hospital a case where this occurred, and to which I wish to call your attention. This woman was the mother of five children. Early in February she had a miscarriage, at about the fifth month of pregnancy. There was considerable hæmorrhage at the time; the discharge did not entirely disappear for four or five weeks. After an interval of about a fortnight, a red discharge, which she supposed to be the regular menstrual flow, appeared, and continued, with short intervals, till the 1st of May, when she came under my care. On examining her, I found the uterus to be much enlarged, the sound penetrating to the depth of four inches. The large size of the uterus, and the freedom with which the sound rotated in the cavity, induced me to suppose that it contained a tumor of some kind, and I determined to explore the interior. I accordingly dilated the cervix, and on passing my finger through the os internum, detected what appeared to be a polypus attached by a slender pedicle to the uterine wall. I seized it with a vulsellum, and using very slight traction, extracted what proved to be a portion of placenta, which had been retained in utero for nearly three months, giving rise to the symptoms I have detailed.

Profuse menstruation, occurring at irregular intervals, is not unfrequently noticed in women approaching the climacteric period, and sometimes assumes an alarming character. The causes of these attacks are sometimes obscure, but in many instances they depend on congestion of the ovaries or uterus, or on hyperæmia of both these organs. They are most likely to occur in women, who, as is often the case at this period of

life, fall into flesh; the attacks are frequently preceded by a feeling of much discomfort, by headaches, and sometimes by tenderness on pressure of the ovaries. During the period the excessive loss is best checked by rest, the application of Chapman's hot-water bags to the sacrum, and by the exhibition of ergot. But our main efforts should be directed to avert a recurrence of the attack. With this view, the bromide of potassium or ammonium may be administered, in thirty-grain doses, for some days prior to that on which the flow is expected. Not unfrequently, however, although the patient looks stout, and even plethoric, she feels weak, and complains of fatigue on the least exertion, the pulse is feeble, the heart's action weak; therefore, in the intervals between each period, you should attend carefully to the general health, see that the diet be nutritious and unstimulating, that open air exercise be taken, while you will at the same time administer tonics, of which arsenic, iron, strychnia, and digitalis, are pre-eminently useful.

From what I have told you as to the causes on which menorrhagia depends, you will understand why it is that astringents, and hæmostatics administered by the mouth, are so frequently ineffectual in checking the hæmorrhage. You are not, however, to suppose that they are useless. On the contrary, they are frequently productive of much benefit, and generally are valuable adjuncts to our surgical treatment. In cases of profuse menstruation depending on subinvolution, ergot is of great value. I usually prescribe it in the form of the infusion, administering with it, if, as is commonly the case, symptoms of ovarian irritation exist, the bromide of potassium in full doses; or if a patient be anæmic, ten drops of the tincture of the perchloride of iron, from three to five drops of the solution of strychnia to each dose of ergot, and am satisfied that the addition of the latter drug increased in a marked degree the peculiar action of ergot on the uterus. I have also tried this com-

bination with advantage in cases of post-partum hæmorrhage. You have had an example of its effects in the case of the patient, who was admitted for profuse hæmorrhage, coming on three weeks after abortion at the fourth month, which I believed to have been kept up by the retention of the placenta, and may have remarked that each dose of the ergot and strychnia was followed by sharp uterine pains, resulting in the expulsion of the placenta. I recommend you to try this in your future practice. Gallic acid, too, alone, or in combination with ergot, is an admirable medicine, and often produces excellent effects. I usually give ten-grain doses of both. The mineral acids and acetate of lead are extensively prescribed in cases of menorrhagia. They are, however, very unreliable agents.

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LECTURE VII.

POLYPUS—VARIETIES OF—MUCOUS—FIBROUS—SYMPTOMS OF—OPERATION FOR REMOVAL OF—ADVANTAGES OF STEEL WIRE—MODIFICATION OF GOOCH'S CANULÆ—FIBRINOUS AND PLACENTAL POLYPI.

IN the preceding lecture, I have spoken of those forms of menorrhagia which depend on, or are caused by, an abnormal or diseased condition of the uterus or of its lining membrane; to-day, I have to call your attention to an affection as important as any of the preceding, one, too, of frequent occurrence, and which almost invariably gives rise to profuse menstruation. I allude to polypus, which may be defined as the result of an hypertrophy of some portion of the uterine substance, which, taking the form of an outgrowth, becomes in time a distinct tumor attached to the wall of the uterus, either by a base of considerable extent, or more frequently, by a well-defined pedicle. These growths are met with of all sizes and shapes, sometimes as little stunted bodies only the size of a pea or small bean; sometimes as large tumors occupying the entire cavity of the uterus, enlarged to the size that organ should be at the fourth or fifth month of pregnancy; but more commonly they are seen of intermediate size.

Occasionally the uterus seems to resent the presence of a polypus which has been developed within its cavity, and by contractions, similar to those of labor, expels it, and thus causes it to assume the form of an extra-uterine tumor; a process which is evidently nature's attempt, often a successful one,

to effect a cure. When this takes place, and an intra-uterine polypus expelled from the uterus reaches the vagina, the hæmorrhage it has given rise to is usually checked, or may possibly cease altogether. But, in addition to those of intra-uterine origin, polypi may grow from the cervical canal, just within the os uteri, or spring from the vaginal surface of the uterus.

Numerous varieties of polypi are described by authors, but for practical purposes they may be classed under two heads, namely, the mucous and the fibrous.

The mucous polypus may spring from any portion of the mucous surface of the uterus; but its favorite seat seems to be the cervical canal, and it may not unfrequently be seen projecting from the mouth of the womb, as a small tumor of a bright pink color, which bleeds on the slightest touch.

These growths, when of cervical origin, seldom attain a large size. The largest of this variety which has come under my observation occurred in a woman, the wife of a cabman. I saw her about twenty-four hours after delivery, and found a polypus, of the size of an orange, hanging partially out of the vagina. It was attached by a long and very slender pedicle to the cervix uteri, the point of attachment being just inside the os. The midwife who attended this woman assured me that her labor had been in all respects easy and natural, and that she did not detect the polypus till after the expulsion of the placenta. Its vitality had evidently been destroyed by the pressure to which it had been subjected during the passage of the child's head through the vagina; for when I saw it, it already exhibited signs of decomposition. This patient stated that having lifted a heavy weight when in the third month of pregnancy she felt something give way internally, and immediately afterwards perceived a tumor at the vulva. Profuse hæmorrhage followed, which, however, soon subsided, and the tumor

receded. During the remainder of pregnancy she enjoyed good health, and, excepting that when fatigued, she noticed something appear at the vulva, she was not conscious of the existence of anything abnormal. A polypus of such size as this springing from the cervical canal, is, however, rare.

Another example of mucous polypus occurred in one of our out-patients, an unmarried woman, aged twenty-four. Persistent hæmorrhage, which all astringents failed to check, compelled me to make a vaginal examination, and I discovered one of these polypi, nearly an inch and a quarter in length, but not much thicker than an ordinary quill, hanging out of the os uteri. In the great majority of instances, however, the mucous polypus does not attain a fourth of that size. These small ones are nearly entirely composed of a soft gelatinous structure. They are highly vascular, and often give rise to severe hæmorrhage quite out of proportion to the size of the tumor. They are generally attached to the canal of the cervix by a slender pedicle, and their vitality is very easily destroyed. It is not at all uncommon to meet with several small mucous polypi in the same patient; occasionally they are of a denser texture, a greater proportion of fibro-cellular tissue entering into their structure, and when this is the case, they are more likely to attain a large size.

Once detected, the removal of these mucous polypi of cervical origin are a matter of great ease. This can be effected either by torsion, or by means of a pair of curved scissors; or better still, by snaring them with a loop of thin iron wire, severing the attachment either by twisting it or by using an *écraseur*. Doubtless, it seems almost unnecessary to use an *écraseur* to remove so small a body, but it is by no means easy to twist off these little growths; it is often imperfectly done, and the consequence is the operation has to be repeated, and thereby much suffering entailed on the patient. I now always

use a wire for the purpose of removing them; indeed I have seen such profuse hæmorrhage follow the excision of even a very small polypus, that I do not think I shall ever again use a knife or pair of scissors for the purpose. In all cases, their point of origin should be cauterized with nitric acid. When they project from the os uteri, this is all that has to be done, but sometimes they lie higher up in the cervical canal, and then you have to dilate the canal before you can reach them. This proceeding may of itself be sufficient to effect a cure, for so readily are they destroyed by pressure, that instances are not of infrequent occurrence, in which hæmorrhage having led the physician to dilate the cervix in order to explore the uterus, he has, when this dilatation was effected, found no morbid structure, the sea-tangle having destroyed by its pressure the polypus to which the hæmorrhage was due. The fact of a polypus not being discovered in any particular case is, therefore, no proof that one may not have existed.

But mucous polypi are occasionally met with springing from the fundus of the uterus; then their removal is a matter of more difficulty, for the uterus must be dilated throughout its whole extent, the polypus seized, its attachment severed, and nitric acid freely applied to the interior of the womb. Here is a specimen of a mucous polypus which I recently removed from a patient in this hospital; it is very large, being as you may see, the size of a goose's egg. The patient from whom this polypus was removed is unmarried, aged twenty-six years. A year and a half ago she presented herself among our out-patients, and stated that of late menstruation had become so profuse as to debilitate her greatly. This, with some leucorrhœa, was the sole symptom she complained of. Suspecting the existence of a polypus, I instituted a vaginal examination; but, as the uterus proved to be of normal size, I did not consider myself justified in exploring its interior, and contented

myself with the administration of ergot and iron. This treatment proved of use, and for a time we lost sight of her, but not long since she again presented herself, and stated that her improvement had been but temporary, that she soon relapsed into her former condition, and, indeed, had gradually become worse. The flow, at the time she presented herself, having lasted for quite three weeks, she was now admitted into hospital.

On examining her, a large, soft intra-uterine polypus was detected. Its lower segment projected through the os uteri, which was dilated to the size of a five-shilling piece. The sound penetrated into the uterus to the depth of four inches. This patient was placed under the influence of chloroform; a wire was passed round the pedicle, and the tumor removed without difficulty; for, though its size was so great, it being eleven inches in circumference, its texture was so soft that it was easily severed from its attachment and drawn through the os uteri. The lower portion of the tumor exhibited well-marked signs of incipient decomposition. This case illustrates three clinical facts of considerable value. First, that these polypi may give rise to no symptom save profuse menstruation; secondly, the comparative rapidity of their growth; and lastly, their tendency to cure by a process of loss of vitality. I may further point out that it also illustrates a fact not sufficiently dwelt on, that intra-uterine polypi, in the majority of instances, occur in women who have never been pregnant.

The fibrous polypus is, I think, more frequently met with than either of the other varieties, and is more difficult to treat. The exciting cause and mode of growth of these tumors is still far from being clearly understood. We only know that, as a rule, they spring from the uterine submucous tissue, are composed of firm fibro-cellular elements, and are invariably covered with mucous membrane. In fact, they are "out-

growths of and from the substance of the uterus, the mucous membrane and the muscular and fibrous tissue of the uterus growing in a variety of proportions into its cavity" (Paget). These polypi are generally supplied with numerous bloodvessels, which, however, are seldom of any magnitude. They are met with of all sizes, nor does the amount of hæmorrhage necessarily bear any proportion to the size of the tumor; they may be small and sessile, but more commonly are connected to the wall of the uterus by a well-defined pedicle, which, however, varies greatly in thickness and length. We seldom find more than one fibrous polypus in the uterus at the same time. I am aware, however, that there are exceptions to this rule; thus I had the opportunity recently afforded me by my friend Dr. Kidd, of seeing a patient from whom he had removed nine fibrous polypi at one operation.

The fibrous polypus generally grows from the fundus of the uterus, though examples from time to time occur of its being attached to other portions of the uterine walls. But no matter where attached, its course is the same—the polypus gradually enlarges, while the whole of the uterus, stimulated apparently by its presence, increases in bulk and density, till, not unfrequently, we are enabled to feel the organ above the pubes. If not interfered with, and if the polypus be pedunculated, it is possible that in time the uterus may expel it, and thus it may become extra-uterine, and even appear at the vulva. Such a course, however, is far from usual. In general the hæmorrhage, which almost invariably accompanies this affection, runs down the patient and compels her to seek for relief long before that stage can be reached; or, if she fail to obtain the requisite aid, consigns her to a premature grave.

The symptoms marking the occurrence of polypus are threefold: namely, hæmorrhage, leucorrhœa, and pain. Hæmorrhage is, I may say, invariably present. The patient generally

first notices that the menstrual flow is more profuse than formerly; then that its duration is prolonged, and that leucorrhœa occurs in the interval; pain above the pubes, and over the ovaries, is also generally complained of. No age, from puberty upwards, possesses an immunity from this disease. Here, on the table, are specimens of four intra-uterine fibrous polypi removed from patients aged respectively twenty-four, forty-six, thirty-five, and fifty-three years, the two former being from unmarried, the two latter from married, women.

The first specimen is the one you saw recently removed from M. D——, who has just been discharged from this hospital. Her case is a very interesting and instructive one. She is aged but twenty-four years, and is unmarried. Three years ago she began to notice that the catamenia were more profuse than natural; they have continued so ever since. About a year ago she, for the first time, experienced pain in the left side of the abdomen, which at one point was tender to the touch; lying on that side, too, caused her much distress, but she was still able to hold her situation as housemaid. On the 8th of August last the catamenia came on suddenly, and so profusely as to cause faintness. On admission into hospital a day or two subsequently, there was little or no discharge present, but the hæmorrhage had been of so alarming a character, that I deemed it necessary, though she was an unmarried woman, to institute a vaginal examination. The vagina was moderately relaxed, the cervix appeared to be healthy, but the body was anteflexed and heavy. The sound penetrated to the depth of three inches. The cause of the hæmorrhage being still uncertain, I proceeded, in accordance with my invariable rule under such circumstances, to dilate the cervix, and, with some difficulty, succeeded in introducing several pieces of sea-tangle. On attempting to withdraw these after the expiration of twenty-four hours, I experienced great difficulty; for the

os internum was so rigid, that it had prevented the tangle expanding at that point, to the same degree it had in the cavity of the womb, and each piece, when finally extracted, was found to be constricted in the centre. Having succeeded, however, in removing them, a larger number were introduced, and next day, I found the cervix was freely dilated throughout its entire length. On introducing the finger into the uterus, I detected a polypus of considerable size, attached by a short thick pedicle to the anterior wall of the uterus near the fundus; the apparent anteflexion of the uterus being due to the fact, that the anterior wall was bulged outwards by the polypus, as shown in Fig. 13 (p. 102). To effect this examination, the anterior lip had to be seized by a vulsellum, and the uterus drawn down in the manner described in my last lecture.

FIG. 14.



Vulsellum.

The position, size, and shape of the polypus being thus ascertained, the next step was to remove it. I shall detail to you exactly how this was effected in the case I am referring to, as it will serve as a description of the mode in which the operation should be performed in all similar cases.

The uterus having been drawn down as low as possible by means of the vulsellum, which was fixed in the anterior lip, the index finger of the right hand was introduced till its tip touched the polypus. Another strong vulsellum, such as that shown in Fig. 14, was then taken in the left hand and guided up to the polypus along the finger, and the tumor firmly grasped by it. The latter instrument being intrusted to an

assistant, the anterior lip was freed from the one by which it was held. This was done in order to give more room in the vagina, but unless the polypus be a firm one, the hold we have obtained on the lip of the wound should not be let go.

Steady traction was now exerted on the polypus by means of the vulsellum with which it was grasped, and it was drawn down as low as possible in the pelvis. A long *écraseur*, made much on the pattern of that suggested by Dr. Braxton Hicks (Fig. 15), and armed with a strong iron wire, was then introduced, the wire being passed over the handles of the vulsellum

FIG. 15.



Wire Écraseur.

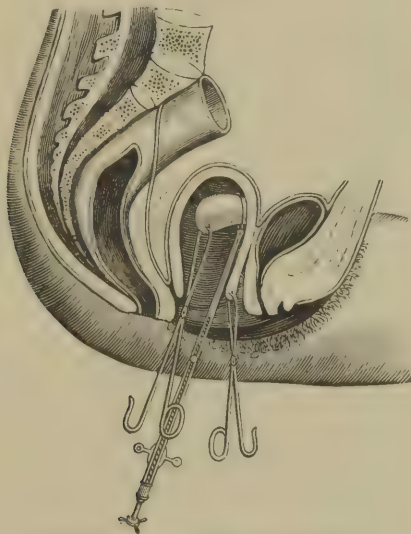
so as to surround them. The extremity of the *écraseur*, kept in contact with the finger, was guided up to the polypus, and the wire, after some difficult manipulation, was slipped over the upper surface of the polypus. The point of the *écraseur* was then pressed firmly against the lower edge of the pedicle, and kept in as *close contact as possible* with its point of attachment to the uterine wall. This is a matter of great importance, for unless the point of the instrument be kept in the position described, the wire will not be drawn close to the base of the pedicle, and thus the whole of the tumor will not be removed. The *écraseur* was then slowly but steadily worked, the pedicle cut through in a few minutes, and the polypus, still held by the vulsellum, extracted (Fig. 16).*

The whole of the inner surface of the uterus was then brushed over with strong nitric acid, with the double intention

* The operation as here described was first practiced by Dr. G. H. Kidd, of Dublin.

of preventing hæmorrhage, and of destroying any unhealthy condition of the mucous membrane of the uterus, should such exist. The patient was, of course, under the influence of chloroform during the operation. She recovered without the least

FIG. 16.



Écraseur Applied for Removal of Polypus.

drawback, was allowed to walk about the ward in a few days, and has since menstruated normally.

This operation, though it is so easily described, is most difficult to perform. The polypus is quite out of sight, and can with difficulty be touched by the finger, even when drawn down with the vulsellum; then the space, in which you must have at least two instruments as well as your finger, is so contracted that one sometimes almost despairs of being able to carry the wire round the tumor; and even when this is accomplished your wire may break, and all the trouble has to be gone over

again. This accident occurred twice in the case of the woman from whom the largest of the tumors I now show you was removed.

In the case I have just detailed, I used a strong iron wire, and though the base of the polypus was three-quarters of an inch in diameter, it was sufficient for the purpose; still, as already mentioned, a single iron wire cannot be relied on if the pedicle be thick. I formerly used a cable of wire twisted tightly together, but some of the strands are liable to give way, and the ends become entangled in the parts, or getting twisted round the extremity of the *écraseur* prevent it working; therefore I have discarded it, and now always employ a strong steel wire,* such as that used for piano strings, except when the pedicle is very slender. For introduction of the steel wire into practice for this purpose we are indebted to Dr. Kidd. Although very stiff, it is hardly more difficult to manipulate in the uterus than the flexible iron wire, for the loop, which is always constricted in passing through the os, expands as the result of its own elasticity on reaching the cavity of the uterus.

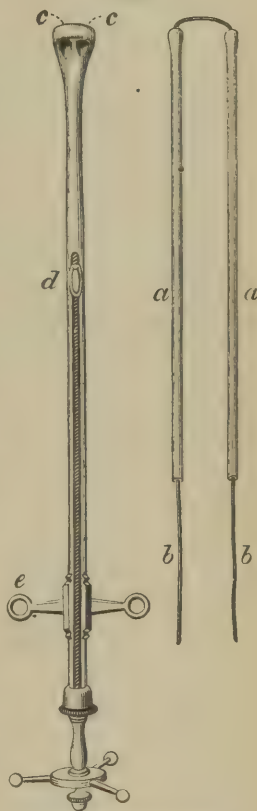
The extreme difficulty of encircling an intra-uterine polypus with a wire or chain, induced Dr. Marion Sims to invent an intra-uterine *écraseur*, which is a marvel of ingenuity but very complex, and in practice has proved a failure. I tried it in two cases, and found it impossible to adjust, and consequently have been compelled to abandon its use.

Influenced by this difficulty, I was led to consider whether a less complicated instrument could not be devised, which

* Dr. Braxton Hicks, who was, I believe, the first to advocate the use of wire cable, still gives it the preference, and is of opinion that a cable of well-annealed steel wire, not too smoothly coiled, answers much better than a single strong wire. He lays much stress on having the head of the *écraseur* slightly curved, so that there may be no angle on which the wire can cut, and on having the eye very much rounded at the edge, so that the cable may not be frayed.

would enable the operator to attain the desired end. I accordingly had this écraseur (Fig. 17) made by Weiss. It differs from an ordinary long wire écraseur only in having the end modified, so as to allow of the passage through it of two slender silver tubes, identical with those so well-known as "Gooch's canulæ." These (*a, a*) armed with a wire (*b, b*) of any strength, can be passed with ease up to the base of the polypus; they are then to be separated, and while one is held firmly, the other is carried round the pedicle. This can always be accomplished when a silk or hempen ligature is used, but it is very difficult indeed, to carry a stiff wire round a large tumor with them. However, I have done it, and cases from time to time occur in which this method proves very useful. Having once got the wire round the tumor, the canulæ are to be passed through the openings (*c, c*) in the extremity of the écraseur; the écraseur is then to be pushed up, guided by the canulæ, till it comes in contact with the pedicle of the polypus, the canulæ can then be withdrawn, and the wire attached to the écraseur at *d* and *e*, the operation is completed as if we were using an ordinary wire écraseur. This is, in point of fact, an adaptation of the canulæ of Gooch to the écraseur.

FIG. 17.



Dr. Atthill's Écraseur.

There has no greater advance been made in uterine surgery than in the treatment of intra-uterine polypus. Before the method of dilating the cervix uteri was introduced, it was impossible to diagnose their presence with any degree of accuracy. We might suspect their existence from the occurrence of hæmorrhage, and of uterine leucorrhœa, but nothing more; now, to use Dr. Marion Sims's language, "We can determine with the minutest accuracy not only their presence, but the size, shape, position, relations, and attachments of all such tumors," and, by means, of the écraseur, remove them in a short time without pain to the patient, who is under the influence of chloroform, and without any great risk to her life.

But a fibrous polypus may spring from the vaginal portion of the cervix, as well as from the interior of the uterus; its removal is then comparatively an easy matter; for, unless the bulk be very great, the chain or wire of an écraseur can be carried round it without much difficulty, and its separation accomplished in a few minutes. These polypi, as well as those of intra-uterine origin, which, having been expelled from the womb, have become vaginal, do not bleed so freely as those contained within the uterus. Dr. McClintock, in his work *On Diseases of Women*, relates a striking example of this. He removed an enormous fibrous polypus, which weighed thirty-four ounces, from the vagina of a woman aged fifty, and yet for two years previously she had not had any red discharge.

Here is a specimen of a remarkable form of fibrous polypus. You see it has a double attachment to the uterus. This patient was admitted into hospital suffering from profuse menstruation. On making a vaginal examination, a large, firm, smooth tumor was found projecting through the os uteri into the vagina. Anteriorly, and rather to the right side, this

tumor could be traced up to the os, with the anterior lip of which it was continuous, and presented the character of a sessile polypus springing from the margin of the os uteri and lower segment of the cervical canal. The finger, passed up over the posterior surface of the polypus, could not reach the upper margin of its attachment. The sound penetrated to the distance of nearly three inches beyond the furthest point the finger could reach in this direction.

The patient having been etherized, the tumor was drawn down by means of a vulsellum, and, with some difficulty, I succeeded in carrying a steel wire, attached to a long *écraseur*, over the posterior surface of the polypus. The wire, however, broke before constriction had proceeded to any great extent, the attachment being evidently very dense and thick. A strong annealed wire was now in like manner carried over the tumor, but with no better success—it also broke; and a third attempt, with a very strong steel wire (piano string), resulted in the breaking of the *écraseur*. The attempt to remove the tumor with the *écraseur* having thus failed, I determined to detach it, if possible, by means of a pair of curved scissors. This proved to be a matter of much difficulty, the tissue being extremely dense; but, after the expenditure of considerable time, I succeeded in cutting through the portion attached to the anterior lip. However, when this was accomplished, I was disappointed at finding that the true pedicle had not yet been reached, but that the tumor sprang from a point in the uterine wall much higher up. The severance of the anterior attachment having given more room, and the tumor being well drawn down by means of the vulsellum, I at once proceeded to complete the operation. This was accomplished partially with the scissors and partly with a scalpel. Considerable hæmorrhage followed, to restrain which I applied the actual

cautery, freely, to the bleeding surface ; but as it still continued,

FIG. 18.



Fibrous Tumor with Double Attachment.

a pledget of cotton saturated with perchloride of iron in glycerin was inserted within the os uteri, and the vagina plugged with cotton wadding. Some hours subsequently, violent and incessant vomiting set in. This I attributed to the irritation caused by the pressure of the plug, for on removing it the vomiting ceased. No further unpleasant symptoms followed, and the patient made a rapid and good recovery.

The tumor, on examination, proved to be a fibrous polypus. It weighed half a pound, its greatest circumference was seven inches, that of the true pedicle, four inches. The most remarkable point connected with the case was that the polypus had two attachments. It appeared to have been doubled back on itself, the point of the tumor having become so firmly and evenly united to the right side of the os uteri, that it was continuous with it. This condition is represented in the annexed wood cut (Fig. 18). This union, I presume, must have occurred as the result of some inflammatory attack which took place when the point of the tumor had reached the os uteri, and that as the tumor subsequently grew, the descent of the point being arrested by its union to the lip of the uterus, the central portion was forced downwards, and thus became the most depending part. The length of the polypus, when *in utero*, measured from its pedicle to the most depending point, was five inches, but, when removed and unfolded, it measured seven and a half inches.

This woman was in a very anæmic condition, and the heart's action extremely feeble. These circumstances induced me to select ether as the anæsthetic to be employed, and the result was very satisfactory. There was no excitement, struggling, or vomiting. The pulse never failed, nor, during the whole of the long period she was under its influence—for the operation occupied an hour and a quarter—was it necessary to withdraw it. The sickness which subsequently followed, I do not attribute, for the reason already stated, to the effects of the ether.

In addition to the two classes of polypi I have just spoken of, and which are undoubtedly outgrowths from some portion of the uterine substance, two others are recognized by pathologists, to which I must allude. The one is termed the fibrinous, and is looked upon by some authorities as the result of abortion. "The embryo having been extruded, the remains of the ovum left behind, form, with the extravasated blood, the foundation of a fibrinous polypus;" others believe these tumors to be "metamorphosed and adherent coagula of retained menstrual blood."

Next, the possibility of the remains of the placenta being capable of giving rise to polypoid bodies in the uterus has also been advocated, especially by Dr. Stadfeldt, of Copenhagen, from a translation of whose paper by Dr. W. D. Moore, in the *Dublin Quarterly Journal*, for November, 1863, I have quoted the foregoing extracts, the perusal of which will amply repay any of you who may desire to become better acquainted with this subject. Dr. Stadfeldt does not believe that those small portions of the afterbirth which nearly always remain after the placenta has been detached, and which usually come away with the lochia, are capable, even if retained, of giving origin to "placental polypi," but only when portions, varying in size "from that of a walnut to that of a goose-egg or larger, and

which contain one or more cotyledons of the placenta," are left behind, and remain firmly attached to the uterine wall.

Ably adduced, however, as are the arguments of Dr. Stadfeldt, I am not satisfied that his views are borne out by the facts brought forward in support of them. They amount to this: that in four cases large portions of the placenta were found after death adherent to the uterus in women recently delivered; the longest interval which elapsed between delivery and death being but four weeks; in his other cases but a few days intervened. With similar instances every obstetric physician is familiar.

In the case related at the conclusion of my last lecture, I removed a portion of the placenta which had been retained in the womb for nearly ten weeks after delivery, and which doubtless was during that time gradually being loosened from its attachment to the uterine wall, and its connection was probably only completely severed by the traction I made use of. That it was still connected with the uterus we may, I think, safely infer from the fact that the mass was not in any degree decomposed; but the persistence of vitality in a portion of placenta adherent to the uterus is a very different thing from its development into a polypus.

I may here allude to those soft, pearl-colored bodies which are occasionally met with in the cervix uteri, and which are sometimes, though incorrectly, termed cystic polypi. They are composed of an albuminous, gelatinous fluid inclosed in a delicate membrane. They appear sometimes to be simply enlarged or hypertrophied Nabothian glands, but are occasionally new growths. I pointed out to you an example of the latter form in one of the out-patients a few days ago, in whom a polypus grew from the lip of the os uteri; it was the size of, and not very dissimilar in appearance to, a grape, and had *not* caused hæmorrhage. When I attempted to seize it with the forceps, it broke, and discharged its contents. I cauterized

its point of attachment freely with nitric acid, and when the woman presented herself again, after the lapse of a few days, no trace of this little polypus remained. In none of the cases which have come under my observation have they been of greater size than a hazel-nut or grape, nor am I aware of any instance in which they were attached high up in the uterus. They nearly invariably grow from some portion of the cervical canal, and are always sessile, that is, grow directly from their point of origin without the intervention of a pedicle; two or more may, and frequently do, occur at the same time. When once detected, they are easily destroyed, either by pressure or by torsion. If situated within the cervical canal, they generally give origin to a glairy discharge, and nearly always cause hæmorrhage.

LECTURE VIII.

FIBROUS TUMORS—DEFINITION OF—VARIETIES OF—SUBPERITONEAL—
SUBMUCOUS—INTRAMURAL—ENUCLEATION—INTRA-UTERINE INJECTIONS—
INFLUENCE OF PREGNANCY—SPONTANEOUS CURES.

I SHALL proceed to-day, gentlemen, to direct your attention to the subject of fibrous tumors of the uterus, a subject of even greater importance than that of polypus, which was last under our consideration, and unfortunately oftener beyond the reach of surgical interference.

A fibrous tumor may be defined as, a growth composed of tissue, identical in structure with that of the uterine wall, but “disconnected” from it, being in general surrounded by a capsule of dense fibro-cellular tissue, which “is peculiarly dry and loose, so that when one cuts on the tumor it almost of itself escapes from its cavity” (Paget, *Surgical Pathology*). This fact of the fibrous tumor of the uterus being by means of its capsule disconnected from the surrounding tissue, distinguishes it from the ordinary fibrous polypus; a distinction which often cannot be made during life. The annexed woodcuts, copied from Paget, illustrate the difference between these two growths; the one (Fig. 19) being a section of a uterine outgrowth or polypus, the other (Fig. 20) of a uterine fibrous tumor, the former being “continuous,” but the latter “discontinuous,” with the substance of the uterus, although both in outward appearance are very similar.

It would be quite impossible in the brief limits of a clinical lecture to enter at any length into the pathology of a subject so extensive as that of fibrous tumors of the uterus. I can only glance at a few of the leading characteristics, referring such of you as desire further information on this interesting subject to the works of Paget, West, McClintock, Matthews, Duncan, and others.

Fibrous tumors are met with of all sizes, from that of a

FIG. 19.



Uterine Outgrowths.

FIG. 20.

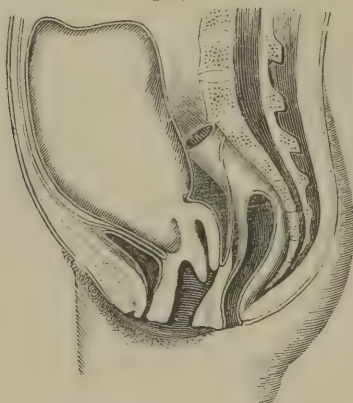
Uterine Fibrous Tumor.
(After Paget.)

grain of shot upwards; those of large size being by no means of unfrequent occurrence, while cases are on record, in which they have attained a size greater than that of the uterus at the full term of pregnancy, and a weight of seventy pounds, or even more. Again, they may be solitary, but usually two or more are present in the same patient; they may spring from the peritoneal surface of the uterus, and can be felt through the abdominal wall; they may grow from the submucous tissue of the uterus, or, finally, be developed within the walls of the organ. Consequently, fibrous tumors are spoken of as belonging to one of three classes, namely, subperitoneal, submucous, and intramural, according as they are found to grow in one or other of the situations I have designated.

The extra-uterine and subperitoneal being in general beyond

the reach of treatment, must be dismissed after a brief notice. They vary in size and appearance in even a greater degree than either of the other varieties; sometimes being numerous, small in size, and sessile, giving the surface of the uterus a nodulated appearance; or, on the other hand, attached by a pedicle which is sometimes short and thick, as shown in Fig. 21, or at other times, so long and slender as to permit the tumor to float, as it were, free in the abdominal cavity, and finally even dis sever itself from all connection with the womb, and possibly become

FIG. 21.



Subperitoneal Fibro-cystic Tumor.

attached to some other portion of the peritoneal surface. When subperitoneal fibroids are pedunculated they sometimes descend into the pelvis, and then, by their pressure on the neighboring organs, give rise to most distressing symptoms. When this occurs, the patient's sufferings are sometimes very severe, incessant desire to micturate, or total inability to pass water, being frequently experienced. Of course, it is impossible to give relief unless the tumor be raised from its position and replaced above the brim. This is always a matter of great difficulty,

sometimes an impossibility. The tumor invariably lies in the posterior *cul de sac*, between the rectum and the uterus, occupying much the same position which the impregnated uterus does when retroverted. With the view of raising it above the brim, Dr. Kidd has adapted to such cases the method suggested by the late Dr. Halpin, of Cavan, for restoring the uterus to its normal position when retroverted during pregnancy. He introduces one of Barnes's largest-sized india-rubber bags into the rectum, and gradually distends it with water by means of a syringe, while, at the same time, steady pressure is made with the finger on the tumor through the vaginal wall. In this way you will occasionally succeed in raising the tumor, and making it slip up into the false pelvis, unless indeed the case be of long standing, and it be bound down by adhesions; should such exist, your efforts will be not only useless, but injurious.

Subperitoneal fibrous tumors do not necessarily give origin to menorrhagia; indeed, as a rule, they do not seem to influence menstruation at all. Thus, in the case delineated in Fig. 21, the catamenia were quite regular. These tumors also generally spring from the posterior surface of the uterus or from the fundus. This, however, is far from being always so; for, in the patient from whom the drawing (Fig. 21) was made, the tumor grew from the anterior wall. This case was interesting too, as affording an example of that form of the disease termed *fibro-cystic*, in which a cyst is developed within the structure of the solid tumor.

The patient was under the care of my friend, the late Dr. Morgan, in Mercer's Hospital, through whose kindness I had an opportunity of seeing her. She appeared to be about thirty-five years of age, was married, but had never been pregnant. She stated that two years ago she detected a small, hard movable tumor in the left iliac region; that a year subsequently she

perceived what she supposed to be another distinct tumor in the right side; the latter was, however, but a projecting portion of one large central growth, which had steadily increased till she had attained the size of a woman near the full term of pregnancy, but she did not think that for the last few months she had become larger. Menstruation appeared regularly at intervals of three weeks; fluctuation was everywhere very distinct, and there was universal dulness on percussion. On making a vaginal examination, the tumor could be easily felt blocking up the brim of the pelvis. The anterior lip of the os uteri, which was greatly hypertrophied, projected into the vagina, the uterus lying quite behind the tumor. The diagnosis of the uterine cystic disease was made, and all idea of surgical interference was given up. This patient subsequently died of an attack of acute peritonitis, and we had an opportunity of verifying our diagnosis. The tumor, which was of enormous size, consisted mainly of an immense cyst; it sprang from the anterior and upper surface of the uterus, being connected to it by a short, thick pedicle. The woodcut, which accurately represents both the size, shape, and position of the tumor, was taken from a drawing made by my friend and former pupil, Dr. Hamilton Moorhead.

The submucous, pedunculated, fibrous tumor is, prior to its removal, in no way distinguishable from and is to be treated in a manner identical with the ordinary fibrous polypus of which I have already spoken. I shall not, therefore, allude to it any further, but shall proceed to the consideration of the third, and most important variety of these tumors.

Intramural, or as they are sometimes termed, parietal or interstitial fibrous tumors, are of frequent occurrence. They differ from the subperitoneal in two important features, namely, that they nearly always cause menorrhagia, and almost as invariably pain, frequently of a very severe character, which

is aggravated on the approach of each menstrual period, while their presence induces enlargement of the uterus, an effect not usually produced, at least to a marked degree, by the subperitoneal variety. Thus, in the case just alluded to, though the tumor weighed upwards of eleven pounds, and was at least twenty-five inches in circumference, the uterus was of nearly its normal size and shape; while the presence of even a very small intramural tumor has been known so to stimulate the womb, that it has grown to a length of five or six inches, while its walls have attained a thickness of an inch or more. Dr. West, in his work on *Diseases of Women*, mentions a case illustrative of this fact.

The growth of an intramural fibrous tumor is sometimes very slow. In a case at present under my observation, and in which the womb has attained a length of five inches, no appreciable change has taken place during a period of several years. On the other hand, the tumor sometimes steadily increases in size, and then one of the three results must occur—either, it will bulge out the peritoneal surface of the uterus, and possibly may become a subperitoneal tumor; or it may continue to grow in the substance of the uterus, the whole of the organ enlarging as the tumor increases; or it may project into the uterine cavity carrying before it a covering of the muscular tissue of that organ. It is easy to conceive how this latter process, if continued, may result in the formation of an intra-uterine tumor, connected with the wall by a pedicle, consisting of muscular tissue continuous with that of the uterus and of the mucous membrane covering it; and that this pedicle may in time elongate, and as it lengthens become more slender, till finally it passes out of the uterus; or even, the pedicle giving way, may be expelled from the vagina. Nearly all writers, with the exception of Dr. Matthews Duncan, admit the possibility of such an occurrence. He thinks that the

uterine wall never elongates before the true intramural tumor, but that the tumor is expelled *bare* into the uterine cavity, enucleation of the tumor, a process to which I shall have to refer by and by, having taken place spontaneously. However, one thing is quite certain, that these growths frequently present themselves as well-defined tumors projecting into the cavity of the uterus.

Here is a specimen of a tumor so circumstanced ; you see that it is connected to the uterine wall by a very extensive attachment, the circumference of the base being greater than that of any other portion of the tumor. It was taken from the body of a patient who recently died in hospital. She was a married woman, aged fifty-three. About five years ago she ceased to menstruate, but after a considerable interval, again observed a sanguineous discharge to appear. This at first recurred with tolerable regularity, then gradually became more and more profuse, till finally it was continuous. Some months ago, she perceived a tumor in the abdomen, which at one point, on the left side, was extremely tender to the touch ; she also experienced constant pain in, and was unable to lie on, that side. When admitted into hospital she was in a very anæmic condition.

On passing the hand over the abdomen, a large tumor could be felt lying rather to the left side, which, as I have already mentioned, was at one point very tender to the touch. On making a vaginal examination, this tumor proved to be the uterus greatly enlarged. The sound passed to the depth of five inches. I at once proceeded to dilate the cervix with sea-tangle, on withdrawing which, this large tumor was detected projecting into, and filling up the whole cavity of, the uterus. The patient's condition rendered it absolutely necessary that its removal should be immediately attempted. I endeavored to accomplish this with Marion Sims's intra-uterine

écraseur, but, as stated in a former lecture, I found that instrument quite unsuitable for the purpose. I then tried an ordinary wire écraseur, and succeeded in ensnaring the tumor, but the wire (an iron one) broke. Three times I succeeded in encircling the tumor with the wire, but the strain to which it was subjected was too great, and on each occasion it broke. As the patient was now much exhausted I desisted from any further attempt; besides, I hoped that the great pressure to which it had been subjected, might have been sufficient to destroy the vitality of the tumor and that it would slough off. Matters went on very well for three days; indeed on the third day she expressed herself as being quite well. There was not any hæmorrhage; she had no pain on pressure, and the pulse was quiet; but, on the night of the fourth day, she was suddenly seized with a violent rigor, complained of intense pain over the abdomen, sank into a state of low, muttering delirium, and finally died comatose.

On opening the abdomen after death hardly any trace of peritoneal inflammation presented itself, but on raising the omentum, that point on the fundus of the uterus which, as previously noticed, had been so excessively tender to the touch, was found to be in a condition of actual mortification. On opening the uterus this enormous tumor was seen; it was nearly five inches in length, and its base where the ligature had surrounded it, measured nine inches in circumference.

This case fairly illustrates the risk which must be incurred in the attempt to remove fibroids having extensive attachments to the wall of the uterus by means of the écraseur; the mortality attending the operation, in such cases, being, as far as my experience goes, very high indeed.

The body is the usual seat of intramural fibroids, but they may be developed in any part of the uterine wall. Thus I recently removed one which was imbedded in the anterior lip

of the os. The patient was an unmarried woman, aged about thirty. She stated that for some months past she had suffered much discomfort from a sense of weight and fulness in the vagina, and that recently she perceived a tumor protrude from the vagina, which receded when she lay down, but always reappeared when she walked about. Menstruation continued perfectly normal.

On examination, an ovoid mass, of the size of a hen's egg,

FIG. 22.



Intramural Fibroid of Cervix.

was seen projecting from the vagina, its long diameter being parallel with the vulva. The protrusion consisted of the anterior lip of the uterus, which was elongated and thickened; the uterus itself being drawn down by the weight of the tumor

till it rested on the perinaeum, the os uteri being close to the vulva. The condition of the parts is correctly represented in the annexed woodcut (Fig. 22).

The diagnosis of a fibrous tumor imbedded in the anterior lip of the uterus having been made, I determined to amputate the elongated portion of the cervix, electing to do so by means of the galvanic knife, hoping by that method to lessen the risk of hæmorrhage, which the thickened and hypertrophied condition of the part led me to think would be likely to occur—an opinion which the event verified. The apparatus employed was Grenet's. The galvanic knife consisted of a loop of platinum wire about half an inch in length, connected by means of the ordinary wire conductors with the battery.

The cervix measured three and a half inches in circumference at the point selected for amputation. The great thickness of the tissue to be divided, and its extreme denseness, rendered the operation very tedious. The cauterization was sufficient to prevent any serious hæmorrhage occurring; still two arteries had to be ligated.

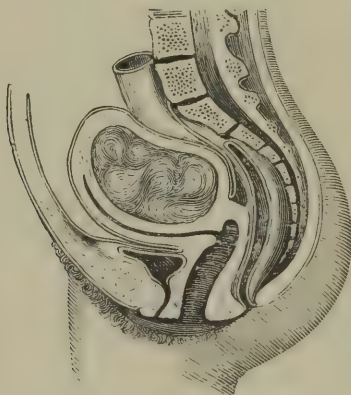
On subsequent examination, the amputated lip was found to contain a perfect fibrous tumor inclosed in its capsule.

In general, however, fibrous tumors appear as mere protuberances, bulging out of the uterine wall, as is shown in Fig. 23. Such tumors as these cannot be removed with an *écraseur*, and yet you cannot leave them alone, for health is undermined, and life itself frequently endangered by the hæmorrhage arising from their presence. The treatment to be adopted in such cases necessarily divides itself into the palliative, and the radical; the former consists in restraining the profuse flow, which occurs at each menstrual period, by plugging the vagina, as recommended in a former lecture, and by the administration of hæmostatics, such as gallic acid, alum, etc., while ergot, alone or in combination with perchloride of iron, is often useful. But

this plan of treatment is irksome to the patient, and can only be looked on as a means of delaying the fatal result, which, if the hæmorrhage continue, ere long must follow unless more energetic means be adopted.

Medicines without number have been administered with the view of causing the absorption of fibrous tumors of the womb. I have tried fully and freely most if not all of them, and believe them to be of no use. It would be waste of time for me

FIG. 23.



Intramural Fibrous Tumor (after Sims).

to go through the long list of drugs which have been recommended in these cases. I do not wish to deter you from trying them in your future practice; they will probably do no harm, but I think I can promise that they will effect little good. For myself, I have lost all faith in the resolvent powers of medicines in the disease at present under consideration.

The very limited good produced by medicines has induced obstetric surgeons to adopt energetic measures for the treatment of intramural fibroids; no less than six methods having been recommended and practiced with the view to the radical cure

of these imbedded fibrous tumors. They are: 1st. Incision of the cervix uteri. 2d. Incision of the tumor. 3d. Incision into the tumor and destruction of a portion of its tissue, a process to which the term gouging has been applied. 4th. Enucleation of the tumor. 5th. Avulsion, or the forcible tearing away of the tumor from its attachment. 6th. The formation of a slough in the tumor and intervening portion of the wall of the uterus, produced by the use of the actual cautery.

The treatment by incision of the os is founded on a theory of the late Mr. Baker Brown's, according to which "the division of the os and cervix uteri, permits the fibres of the body of the uterus to contract upon the contained tumor, and thereby to compress the vessels and prevent hæmorrhage." Whether this be the true explanation or not, one thing is quite certain, that the operation is occasionally followed by good results, and in the case of very large tumors, which are contained within the uterus, and when the cervix is thin and spread over them, it is fully justified.

The incision of the tumor has been practiced by Dr. Atlee, in America, by Dr. Tracy, of Melbourne, and others, with success—a success which is probably due to the fact that the vitality of these tumors is nearly, if not altogether, destroyed by the incisions having divided their capsules; for the fibrous growth itself is endowed with but a very low degree of vitality. I have on several occasions incised these tumors with the effect of moderating the hæmorrhage for a time, but it is an operation that cannot be relied on.

Enucleation, that is the cutting down on, and division of the capsule, the tumor being then seized and turned out of its capsule, is an operation suggested by a consideration of one of the processes by which nature occasionally effects a spontaneous cure; the capsule and investing covering of the tumor becoming thinned at one point by a process of absorption, the con-

tained tumor is then pushed out by the contractile power of the uterus, and so finally expelled. Enucleation is advocated by Dr. Matthews Duncan, with his usual ability. He also practices the operation of avulsion, that is the seizure of the tumor with a strong vulsellum, and forcible avulsion of it from its attachment.

Avulsion is adopted by Dr. Duncan in cases in which spontaneous enucleation has already partially begun, or where that process, having been artificially commenced, has advanced to a certain extent. He considers it to be the proper practice in those cases of fibrous tumors in which the patient's life is in great danger, and which medical treatment is unable to avert.

In the following case I successfully practiced avulsion, enucleation of the tumor having been previously effected: C. S., æt. 40, a widow; admitted into the Rotunda Hospital, June 8th, 1877. She stated that she has had two children, and always enjoyed good health till the birth of her last, sixteen years ago, after which she observed the menstrual periods to become profuse, and occasionally to re-occur twice in the month. Of late the intervals became longer, but the loss continued as profuse and as weakening as ever, and was accompanied by great pain. In March last the hæmorrhage was so profuse that she was confined to bed for five weeks, and has suffered ever since from excessive weakness and pain in the back and above the pubes. She also suffers from a constant leucorrhœal discharge of a yellow color and fetid odor.

On passing the hand over the abdomen, a large tumor of very dense structure could be felt rising out of the pelvis and reaching to within an inch of the umbilicus; this, on a bi-manual examination, proved to be uterine. The sound passed to the depth of nearly seven inches; the os uteri was patulous, and through it the finger reached a globular tumor, apparently imbedded in the uterine wall.

The diagnosis of intramural fibroid was made.

It being evident that this woman would soon sink from the combined effects of uterine hæmorrhage and profuse leucorrhœal discharge, I decided on attempting the removal of the tumor.

June 25th. As a preliminary step, the patient being brought under the influence of chloroform, the cervix was divided freely on both sides by means of Kuchenmeister's scissors; no hæmorrhage followed. She was then ordered the following mixture:

R. Liq. ferri perchloridi,	.	.	.	.	.	.	3ij.
Liq. ergotæ (B. P.),	.	.	.	.	.	.	3iv.
Inf. ergotæ ãã,	.	.	.	.	.	.	3viii

An ounce three times a day.

July 13th. Being again brought under the influence of chloroform the tumor was seized with a strong vulsellum, and its base, easily reached through the now patulous cervix, was with a knife freed from its attachment to the uterine wall, to the extent of nearly two inches; an incision dividing the capsule was also made into the tumor on its anterior surface in a direction perpendicular to its base. A moderate amount of blood only was lost, and it was not found necessary to have recourse, either to the plug, or the use of the perchloride of iron.

After a lapse of a couple of days the patient was again put on the ergot mixture already mentioned, with this remarkable result, that whereas when previously administered it did not seem to produce any effect, now the same medicine brought on powerful uterine action; each dose produced this effect within half an hour of its being taken, and the pains continued for four or five hours. Indeed, such extreme suffering was produced, that the patient absolutely refused to continue the medi-

cine. This remarkable difference in the action of the ergot was probably due to the fact that, the capsule of the tumor being divided, the tumor was now, as it were, a foreign body in the uterine cavity, whereas previously it had formed part of the uterine wall.

27th. A large section of the tumor has passed through the os uteri, and the rim of the os can be felt grasping the centre of the half-expelled tumor.

August 10th. The pains have ceased for the past day or two, and the ergot no longer induces uterine action. On examination, the tumor is found to occupy the position of the foetal head in the second stage of labor; the os uteri can no longer be felt. In fact, the tumor has been expelled from the uterus, and is only attached to the fundus by a comparatively small base, and is virtually "enucleated."

No hæmorrhage whatever had occurred since the operation of July 13th. There is, however, a very copious vaginal discharge, brownish in color, constantly present. The patient did not suffer any pain, but complained of great debility. It being evident that nature would do no more, and it being impossible to leave the patient in her present state, the removal of the tumor by *avulsion* was decided on. The patient was accordingly brought under the influence of ether, and the projecting portion of the tumor being seized with a strong vulsellum, traction was employed, the left hand of the operator being introduced between the tumor and the pelvic wall, and the detachment of the tumor aided by the fingers of that hand. The tumor was thus finally torn from its attachments, and completely removed.

The cavity was now sponged out and plugged with pledgets of lint saturated in a solution of ferri perchlor. (1 in 3.) The hæmorrhage during the operation was inconsiderable. The tumor, which was of an irregular ovoid shape, weighed

13½ oz., and measured five inches in length in its longest diameter.

This patient made a rapid recovery.

There are less heroic modes of treatment, I would have you bear in mind, and under certain circumstances practice, before having recourse to surgical measures. One is the injection, after previous dilatation, of tincture of iodine, or of the liquor of the perchloride of iron, into the uterine cavity. This practice is warmly advocated by Dr. Routh, of London, and, if the cervix and os internum be first dilated, so that the injection may have a free and rapid exit, I do not think that it is likely to be followed by unpleasant symptoms. My friend Dr. McClintock informs me that he has recently injected tincture of iodine with marked success, in the case of a lady, whom I had an opportunity of seeing with him, and in whom alarmingly profuse menstruation, which he ascertained to be dependent on the presence of a large fibroid, occurred from time to time.

Dr. Matthews Duncan has recorded two cases in which he successfully restrained dangerous hæmorrhage, depending on the existence of a tumor in the uterus, by the injection, in each case, of one drachm of the liquor ferri perchloridi dil., by means of a hollow sound, into the cavity of the womb. In his cases the cervix does not seem to have been dilated, a precaution I should always adopt.

The hypodermic injection of ergot has, for some years past, been extensively practiced for the control of various forms of hæmorrhage, and with considerable success; latterly the same treatment has been adopted with the view of checking *post-partum* hæmorrhage with equally good results, the main objection to its use being, that troublesome sores are apt to form at the site of the operation. Dr. Hildebrandt*

* Gazette Hebdomadaire de Médecine et de Chirurgie, vol. ix, page 443.

has published the particulars of numerous cases in which he has practiced the subcutaneous injection of ergot in the treatment of fibrous tumors of the uterus. He comes to the conclusion that ergot thus used is a powerful agent. In one case, a tumor which reached above the umbilicus disappeared ; in a second, a tumor, extending as high as the false ribs, descended below the umbilicus, and in four other cases, in which the treatment was otherwise less complete, there was an amelioration of the general and local condition. According to him, ergot thus employed rectified menstruation in almost all the cases, rendering its recurrence regular, less profuse, and above all, less painful. It is true, as Dr. Hildebrandt remarks, that it is not easy to state precisely how the ergot acts ; but he adds that it is very likely that, as a result of the contractions produced by the ergot in the nutritive vessels of the tumor, and in consequence of the compression exercised in all directions by the contractions of the uterine walls, the nutrition of the tumor is impeded, and that in time fatty degeneration and absorption follow. It is probable that intramural tumors are more easily acted on than subperitoneal. Dr. Hildebrandt's formula is: Watery extract of ergot, three parts ; glycerin, seven parts ; and distilled water, seven parts. Such a solution is better, in his opinion, than an alcoholic one, as its use does not produce so much pain, and is not so liable to be followed by the formation of abscesses. He recommends that the injection should be made in the lower segment of the abdominal walls, between the umbilicus and pubis, and says, that after the operation the patient may be allowed to walk home. There is no doubt but that an aqueous solution is less liable to be followed by unpleasant consequences than a spirituous one. I at first adopted Dr. Hildebrandt's formula, and injected from three to five drops of the liquid extract of ergot on each occasion. Encouraged by his experience I injected, as you may remember,

about three minims of the liquid extract of ergot under the skin of the abdomen, in two of our out-patients a few days since, and allowed them to walk home. Both suffered severely; one was confined to bed for three days subsequently, so intense was the pain she experienced, and so considerable the inflammation which ensued. I should not recommend you to employ the hypodermic injection of ergot, unless the patient could remain at rest.

But I have no hesitation in saying that the addition of glycerin is most injudicious. Since I have ceased to add it to the solution I have not had any unpleasant results.

I have given the hypodermic injection of ergot a full and fair trial, both in hospital and private practice. The details of the following cases will enable you to judge for yourselves as to the results which may be expected from this mode of treating uterine fibroids. They are doubtless too few in number to lead to any definite conclusion, but I think they establish two facts: 1st. That the hypodermic injection of ergot is most efficacious in restraining uterine hæmorrhage depending on the presence of a fibroid; and, 2dly, that the treatment is not altogether unobjectionable. In three of my cases troublesome abscesses formed, sooner or later, in two of the patients giving rise to considerable constitutional disturbance, while in a fourth I was obliged to abandon the treatment in consequence of the excessive pain following the injection. It is worthy of special notice, however, that since I omitted the glycerin no abscess or sore followed the injection.

CASE I.—M——, aged 41, suffered from very profuse menstruation, the periods being invariably ushered in by such intense pain that for a long time previous to her admission into hospital she had been in the habit of taking large doses of opium nightly. On admission, a tumor, as large as the foetal head at full term, could easily be felt in the abdomen. The

sound penetrated to the depth of $4\frac{1}{2}$ inches, and after a careful examination, the diagnosis of fibrous tumor of the uterus was made. As the case seemed a very suitable one in which to try the effects of the hypodermic injection of ergot, I at once commenced this treatment, using for the purpose the *extractum ergotæ liquidum* (B. P.) in proportion of three parts of the extract to seven of glycerin and seven of water, this being the formula recommended by Professor Hildebrandt. The first injection of twenty minims of the solution just named, containing about m^{xxiiss} . of the ergot, was made on the 1st November, during a very profuse menstrual period. In about three hours it markedly checked the flow, but the pain caused was so intense that I did not venture to repeat the injection for several days; the flow, I should add, entirely ceased on the second day after the injection. On this occasion, and on all the subsequent ones, the fluid was injected behind the great trochanter, the needle being made to penetrate into the substance of the glutæus muscle, on either side alternately, to the depth of upwards of half an inch, previous experience having proved to me the correctness of the observation made by Dr. Keating in *The American Journal of Medical Science*, that the tendency to inflammation occurring after the injection of ergot is much lessened by passing the needle through the cellular tissue into the substance of the muscle.

The second injection was made on the 9th November, and the third on the 16th. From that date the injections were repeated on every second or third day, and once or twice on two days in succession, according to the intensity and duration of the pain produced by the operation, until fifteen injections had been given. Two abscesses then formed on the site of the two last injections, and these became so very painful and troublesome that the treatment had to be discontinued for three weeks.

The effects hitherto observed were these: 1st. Very intense

and long-continued pain always followed the injection. The duration of the pain was from five to twelve hours, after the lapse of which time it gradually subsided, leaving her greatly exhausted. She was unable to sleep during its continuance. I was therefore obliged, except on two occasions, to allow at least forty-eight hours to elapse between the injections. 2dly. The duration of the catamenial period, which on admission had been fourteen days, was, on the recurrence of the first period after the ergot had been injected, reduced to four days; on the second to two days, and on the third to one day. 3dly. The *periods* were rendered free from pain; formerly, the pain at these times had been very intense. It is necessary to add that the two last injections were not made in accordance with the rule I had laid down, namely, that the needle should penetrate deeply into the substance of the muscle, for during my absence the needle was introduced on one occasion over the head of the femur, and, on the other occasion, very near the crest of the ilium.

It was not until the 5th of January, 1874, that the abscesses and sinuses resulting from the injection of the ergot had sufficiently healed to permit a resumption of the treatment. On recommencing I resolved to employ a different preparation of ergot, and accordingly procured some of "Wiggers's pure ergotin."

This, instead of being a liquid, is a granular substance, and very insoluble; I injected two grains of it on the 5th. The catamenia had appeared two days previously; the flow lasted four days without pain. I consider this satisfactory state, however, as due to the previous treatment. On the 10th, having passed the sound into the uterus, the flow returned and continued for four days more; and again, after an interval of but four days, the discharge reappeared, continuing for six days, the hypodermic injection being repeated daily. On the 2d of

February I made the following note: "The hypodermic injection of the Wiggers ergotin did not cause any pain, but it seems to be inefficacious, for the metrorrhagia has returned."

I now decided on trying Bonjean's ergotin; this is a thick fluid, easily mixable with water. I injected mxiv of it dissolved in mxx of water. This caused some pain; less, however, than that produced by the English preparation. The injections were, from this date, continued regularly, mv of ergotin being injected every second day.

March 11th. Catamenia came on after twenty days' interval, accompanied with intense pain, which was only relieved by the hypodermic injection of morphia. The flow ceased on the seventh day. I believe Bonjean's ergotin to be less efficacious than the English preparation, but on the other hand to be much less irritating.

Shortly after the last date this patient was compelled to return home. She resides in a very remote part of Ireland, and I have been unable to learn anything of her present state.

CASE II.—This case is of little practical value, excepting so far as it illustrates the difficulty of carrying out the treatment of fibrous tumors by the hypodermic injection of ergot.

A. M——, aged twenty-five, a pale, unhealthy-looking woman, six months married, presented herself among the out-patients of the Adelaide Hospital. She stated that of late she was hardly ever free from profuse and weakening hæmorrhage. Her appearance fully confirmed this statement; she was evidently anæmic and in very bad health. On examination, a large interstitial fibroid was diagnosed. In her case I commenced treatment by injecting mxiv of Bonjean's ergotin, dissolved in fifteen minims of water. The fifth injection, however, was followed by the formation of a very painful and troublesome abscess, and on recovering from it she left the hospital; nothing would induce her to permit the injection to be repeated. I think it probable

that the rapidity with which abscesses formed in this case may be accounted for by the fact that the woman was evidently ill-fed, and in a thoroughly bad state of health.

CASE III.—An unmarried lady, aged 48, came under my care in February, 1874, at the termination of a very profuse menstrual period. She stated that eight years previously, she had detected a tumor in the abdomen, which had gradually increased to its present size. Menstruation had, for many years, been profuse, becoming markedly so during the last two years, with occasional hæmorrhagic discharges during the intervals, never, however, until recently, of sufficient severity as to cause alarm. She had always been more or less of an invalid, and was, moreover, the subject of well-marked cardiac disease. The tumor was very large—it reached nearly to the umbilicus. The sound penetrated to the depth of five inches. The diagnosis of fibrous tumor was made. When I saw her first she was in a state of great danger. The excessive loss of blood had reduced her to a condition of extreme debility. She fainted constantly; the pulse was small, feeble, and intermittent. Under treatment she gradually improved; but being convinced that a recurrence of the profuse loss would probably prove fatal, I determined to try the effects of the hypodermic injection of ergot, not, however, without considerable hesitation, for, in her debilitated state, I dreaded the formation of abscesses, which my previous experience had shown me were so prone to occur.

I should add, that at this time the periods recurred at intervals of not more than fourteen days, and that during this interval, she was seldom free from a slight red discharge.

The first injection of two grains of Boujean's ergotin was made on the 20th February, the same formula being used as in the former case. The needle was inserted behind the great trochanter, and made to penetrate to the depth of at least an

inch. No pain followed. From that date to the 20th of March, the injection of the Bonjean's ergotin was continued with tolerable regularity on every second day; occasional intermissions, however, occurred, when, from a feeling of excessive debility, arising generally from the heart's action being more than usually irregular, she seemed unable to bear the pain, trifling though it was. Five grains of the ergotin were, during this period, injected on each occasion. The hæmorrhage returned on the 20th March, so very profusely, that I was obliged to plug the vagina; the interval had, however, lengthened a little.

After an interval of three weeks, I recommenced the injections. When it had been employed for some days, one improvement in her condition was noticed; the slight red discharge, which had never been absent for more than a few hours together, ceased to appear; the interval between the periods also was prolonged, the flow not appearing on this occasion till the 8th of May, an interval of a whole month. The loss on the 10th was very heavy, but the period lasted only five days. This result I looked upon as most satisfactory, but at this juncture, the seat of the last injection inflamed, and after much suffering, an abscess formed, and though opened in good time, a troublesome fistulous sore resulted, which healed up very slowly. The treatment, therefore, was necessarily suspended.

On the 22d she unfortunately caught cold, and suffered from an attack of rheumatic fever. This attack greatly reduced her strength, and shortly after she died rather suddenly, with the symptoms usually attending the formation of a clot in the pulmonary artery. There can be no doubt but that the injection of Bonjean's ergotin in this case was productive of marked good. The sanguineous discharge, which had been for a very long time constantly present, disappeared; the interval be-

tween the periods lengthened from fourteen to twenty-four days, and the periods themselves became correspondingly shortened; but, notwithstanding every possible precaution, an abscess formed.

The results so far obtained discouraged me greatly, and for a time I discontinued treating fibroids by the hypodermic injection of ergot, but Dr. Hildebrandt's further published statements as to his continued success induced me to give it another trial. I resolved, however, to omit the glycerin from the solution, and to use the *extractum ergotæ liquidum*, B.P., dissolved in water alone, and since doing so, I have not been once troubled by the formation of abscesses and sores, which in my former cases had given rise to such pain and suffering. The following is a brief abstract of some of the cases I have recently treated:

CASE IV.—Mrs. —, a widow, aged 38, never pregnant, the subject of a large intramural fibroid; suffered from sense of weight, prolonged but not profuse menstruation, and an intramenstrual flow, lasting for two or three days. I injected $\mathfrak{m}\mathfrak{v}$ of the *ext. ergotæ liq.* with $\mathfrak{m}\mathfrak{x}$ of water, twice a week, for fifteen weeks, with the following results: total cessation of the intramenstrual discharge of blood, and shortening of the menstrual period by about thirty-six hours, no pain following the injection, either in the tumor or at the seat of the injection, which was made behind the trochanter, in each side, alternately.

CASE V.—A married woman, never pregnant, the subject of a large intra-uterine tumor; menstruation recurred at intervals of fourteen days, lasted for ten days or longer; is blanched, anæmic, and very feeble.

Ergot injected six times, at intervals of two days; pain experienced at seat of the first injection, but not subsequently; menstrual flow did not come till after an interval of twenty-

four days, and lasted but six days; on its cessation, dilated uterus and removed an intra-uterine fibrous polypus.

CASE VI.—M. G——, æt. 48, unmarried, admitted 6th January, in a state of extreme anæmia, pallid and exsanguine, the result of long-continued uterine hæmorrhage; she was the subject of a huge intramural fibroid, very hard in texture, and easily felt through the abdominal parietes. It reached to within an inch of the umbilicus, and dipped deep into the pelvis. Menstruation lasted usually for fourteen days, and in fact she has, during the past year, been seldom free from a red discharge. She was also in constant pain.

January 14th, ℥v of the liquid extract of ergot, and ℥x of water, were injected into the substance of the glutæus muscle; this was repeated on the 17th and 20th of January; she felt pain in the uterine tumor in about an hour after the injection had been made. From this latter date, the ergot was injected every second day, and now she stated that severe pain commenced in the tumor immediately after the injection, and lasted for five or six hours. But little pain or soreness was felt at the seat of injection, which was made into the substance of the muscle on each side, alternately, the needle always penetrating to the depth of an inch or more. A menstrual period commenced on the 22d January, and lasted to the 28th.

7th February. Severe pain experienced in back and stomach, followed by vomiting, relieved by hypodermic injection of morphia; injection of ergot suspended.

9th. Injection of ergot resumed.

13th March. Since last date the injection of ergot has been practiced regularly every second day; great pain referred to the rectum now experienced after defecation; catamenia appeared on the 18th, after an interval of three weeks; is stronger, and were it not for the great pain, would be decidedly better.

To have gr. 4 iodoform in a suppository each night, ℥vij of ergot to be injected daily, with ℥vij of water.

18th. Iodoform suppository has been of much use in relieving the pain experienced in the rectum, also that felt in tumor; it gives as much relief as a morphia suppository, and does not cause sickness.

3d April. Menstruation appeared on the 1st, lasted only *two days*; tumor seems smaller.

21st May. Menstrual period just over, lasted four days; now experiences incessant pain of the most wearying character, sometimes agonizing, demanding the repeated administration of morphia hypodermically; appetite quite gone, confined altogether to bed from the pain.

The injection of ergot had been now carried on continuously for more than four months, and upwards of sixty injections had been given, but though the hæmorrhage had been controlled, the patient's condition was in no way improved, and I reluctantly abandoned the treatment. The result was that the hæmorrhage returned with such violence as to necessitate plugging the vagina; all this time, however, she was free from the least tendency to the formation of sores or abscesses at the site of the injections, and this, although more than sixty had been given.

The conclusions to be deduced from the foregoing cases are these:

1. That *Wiggers's pure ergotin* is inert, and useless for the purpose of hypodermic injection.
2. That *Bonjean's ergotin*, hypodermically injected, exerts a marked effect on cases of uterine fibroids, lessening the amount of blood lost and shortening the periods, but that its use is liable to be followed by the formation of abscesses.
3. That the *extractum ergote liquidum*, B.P., is still more efficient in checking uterine hæmorrhage, occurring in these

cases, but that its use sometimes causes severe pain, and that troublesome abscesses occasionally form at the site of the injection, though these are not likely to occur unless glycerin be added to the solution.

I should add that I have also tried the ergotin discs prepared by Messrs. Savory and Moore, but I do not think them to be at all as efficient as the liquid extract.

From what I have already said, you will gather, that I am not an advocate for surgical interference in cases where large uterine fibroids exist, if it can possibly be avoided. My reasons for arriving at this conclusion are twofold, namely, that the vast majority of such cases go on tolerably well for years, and that if by plugging the vagina, by the hypodermic injection of ergot, or the use of other means, at our disposal, we can check profuse menstruation when such exists, there is every probability of the patient's condition improving when she arrives at the climacteric period, and when the uterine functions cease to be actively performed. But on the other hand, cases are from time to time met with, in which surgical interference is imperatively called for. That of M. B——, whose case I have just been alluding to, is one of these. You remember, that by the hypodermic injection of ergot, we succeeded in restraining the excessive menstrual flow, but that her condition did not improve; that she became more anæmic and weaker day by day, apparently as a result of the excessive pain from which she suffered, pain so intense, that the administration of morphia by the rectum or by the skin, was imperatively required, not once but three or four times during each twenty-four hours. Her appetite failed, she became daily more pallid, and if possible more emaciated; life could not under such conditions endure very long. She begged, too, that something might be done, which would afford a chance of relief from her sufferings, and expressed herself quite indifferent as to the re-

sult, life having become unbearable to her. But any possible operation involved grave responsibility, as well as serious risk. We had to deal with a tumor which extended to within an inch of the umbilicus, and dipped down deep into the pelvis. The os, which was very small, lay far back, and could only be reached with difficulty; the sound penetrated to the depth of five inches, proving that the whole uterus was implicated. The tumor itself was firm, and dense to a degree, and I was satisfied that to dilate the os uteri, and attempt the removal of the tumor through it, would be a futile as well as a dangerous proceeding. I, therefore, after much consideration, resolved to attempt its enucleation by the use of the actual cautery, applied freely through a wooden speculum to the anterior portion of the cervix, which was stretched out over the tumor, and projected so much in front of the os that it could be reached without much difficulty. I decided on adopting this course in consequence of the satisfactory results of this treatment obtained by Dr. Greenhalgh, of London. The following conditions are essential for success in such cases: 1st. That the tumor be intramural. 2d. That it extend down to and involve the neck of the uterus. 3d. That it bulge out the neck, so that on introducing the wooden speculum, the portion of the neck selected can be easily reached by the cautery. All these conditions existed in the case now under our consideration. Accordingly, having placed the patient under the influence of chloroform, I introduced a full-sized wooden speculum, and through it applied the cautery, causing it to burrow deeply into and through the texture of the cervix, till it penetrated into the substance of the tumor. I then placed in the vagina a pledget of lint, saturated with glycerin, and withdrew the speculum.

On recovering from the effects of the chloroform, the patient expressed herself as being freer from pain, and easier than she had been for a long time previously; this condition I pointed

out to you, was probably due to the lessening of the extreme tension of the uterine tissue, which had so long existed, caused by the steady growth of the tumor within its substance.

On the separation of the slough the tumor could be felt through the opening formed in the wall of the uterus, like a foetal head inside a rigid os uteri. I now divided with a knife the portion of the uterine wall intervening between the opening made by the cautery and the canal of the uterus, thus laying bare the surface of the tumor to a considerable extent. The results obtained were twofold, namely, relief from intense pain, and diminution of the amount lost at the menstrual period, for the period just past was by no means excessive. The condition of the patient, too, has greatly improved. At present there is a great tendency in the opening to close altogether. Though so far the results have been good, no approach to a cure has in this case been as yet made.

I have now given you an outline of the pathology and treatment of the various forms of fibrous tumors, but there yet remain two interesting and important phases of their history, to which I must allude before concluding the subject; the one the increase and subsequent decrease in their size, which is sometimes observed; the other, their occasional absorption, transformation, or even elimination.

All fibrous tumors, especially the submucous, when they hang into the cavity of the uterus, are liable to become œdematous, and to this cause many of the recorded cases of enlargement, and subsequent decrease in their size, is referable. But in addition to this cause, menstruation and pregnancy undoubtedly influence both the condition and size of these growths. In many cases a fibrous tumor, which ordinarily is productive of no discomfort to the patient, becomes at each menstrual period the seat of pain. This is a fact I have several times noticed. That actual increase in bulk should also occur at

the epoch is easily understood. The following case, illustrating this, is recorded by Dr. Ernest Lambert of Paris:* "Age of patient, thirty-eight; for ten years past a tumor appeared before each menstrual epoch, disappearing in turn to reappear again; for a year past it ceased to disappear, and had become the seat of severe pain." After death, a large fibrous tumor was found growing from the anterior surface of the uterus. From the same author I quote the two following instructive cases: The first is on the authority of M. Depaul, who relates that having been summoned to a patient at a distance from Paris, he found three physicians in attendance on a primipara, supposed to be three months pregnant. She had suffered for some time past great difficulty both in passing water and in defecation, and for four days previous to M. Depaul seeing her, had been unable to empty either the bladder or rectum; even the catheter could not be passed except with great difficulty. She suffered from the most powerful expulsive pains, and her agony was very great. M. Depaul recognized the existence of a large fibrous tumor, which filled the pelvis; the patient's state was one of great danger. With difficulty he reached the os uteri, introduced a sound and brought on premature labor. The next day a fœtus, "flattened like a sheet of cardboard," was expelled; in a short time this tumor had decreased to a third of its former size, and at the end of four months was not larger than a small apple; it was situated in the anterior wall of the uterus, near the neck.

The second case was that of a woman, æt. forty-four, who had given birth to several children; she was admitted into hospital on the 21st of March, 1869. The membranes had ruptured before her admission, and the feet of the child were

* *Etudes sur les Grossesses Complicquées de Myomes Uterine*, Par le Dr. Ernest J. Lambert. Paris, 1870.

in the vagina. The child was extracted alive, and in a few minutes the placenta was expelled. On placing the hand on the abdomen shortly after, a tumor as large as a child's head was felt at the fundus of the uterus; supposing that it was a case of twins a vaginal examination was made, but no fœtus could be felt. As the placenta had come away, and as there was not any hæmorrhage, it was not deemed right to explore the interior of the uterus, but the hand laid on the abdomen easily detected the presence of a tumor as large as the head of a fœtus at the eighth month of pregnancy; below this large tumor a smaller one could be felt, which was supposed at first to be the elbow of the child; careful auscultation, however, failed to detect the sounds of the foetal heart; the diagnosis seemed very obscure. The woman declared that there was no cause for anxiety, as she had these tumors after each confinement, and that they always disappeared in a short time. The next day the large tumor was unchanged, but in place of the sharp projecting tumor, a globular one of smaller size existed; two days later, the large one only could be felt. She died of fever on the 12th of April, twenty-three days after delivery. On making a *post-mortem* examination, two fibrous tumors were discovered, the larger the size of a hazelnut, the other still smaller. Dr. Lambert concludes by saying, "We saw in this case a woman, in whom at the moment of her accouchement there existed in the parietes of the uterus, tumors, of which one had the volume of the head of a fœtus at the eighth month; these tumors could be as clearly made out as if they had been laid bare, for the abdominal walls were very thin and flaccid, and the autopsy discovered but two little fibrous tumors, of which the largest was but the size of a nut." It would be quite foreign to the scope of these lectures for me to enter on the subject of the influence which fibrous tumors exercise on pregnancy, but the two cases just quoted, clearly prove, that

pregnancy stimulates them to a very dangerous degree; and this knowledge should certainly induce us to warn any woman in whom they exist, should she consult us on the subject, that marriage ought not to be thought of.

Fibrous tumors, when left to themselves, not unfrequently undergo changes which may not only alter their character, but also result in an actual cure. One of the most remarkable of these changes is the development of cavities, or cysts, in their substance. These are especially likely to form in tumors, the texture of which is loose. According to Sir J. Paget, this may be due either to a local softening and liquefaction of portions of the tumor, with effusion of fluid in the part affected, in which case the cavities are irregular and without distinct parietes; or they may be true cysts, their cavities being lined by a membrane. In either case they may be small and numerous, or of such great magnitude as to be mistaken for, and treated as, ovarian cysts; a very serious mistake indeed, and one unfortunately too often made. I shall, however, have more to say with reference to this point when I come to speak of ovarian tumors, and shall therefore defer making any further remark on this part of the subject for the present.

But nature also makes an effort, and not unfrequently a successful one, to effect a cure in these cases. Dr. McClintock has pointed out five methods by which this result may be attained—namely, by, 1st, absorption; 2d, calcareous transformation; 3d, detachment; 4th, sloughing or disintegration; 5th, expulsion by the uterine contractions. Examples of absorption have been frequently recorded, and are sufficiently numerous to induce us to postpone surgical interference, if the symptoms be not urgent, and especially if the patient be near the climacteric period. I have two such cases at present under observation. In one, menstruation, which for several years past has been very profuse, is now at the age of forty-nine

become much more moderate in quantity ; this patient refused to submit to any local treatment.

Cases are met with, in which calcareous deposits have been formed in the substance of fibrous tumors, and it is possible that the process may extend to the entire tumor. Here is a specimen of such which I removed after death from the body of an old woman, who died of pneumonia in the Adelaide Hospital.

Detachment and separation is most likely to occur in cases of the submucous variety, for in the intramural the formation of a long pedicle is very unlikely, and according to Dr. Matthews Duncan, never does take place, and unless this happens, the spontaneous detachment is a very unlikely occurrence.

But, on the other hand, in the case of the imbedded intramural tumor, a cure sometimes results by a process of sloughing, which either gradually breaks up the growth, or, if that process be confined to its muscular and mucous coats, frees the tumor and permits its spontaneous enucleation.

Expulsion is but a variety of the curative process last spoken of ; the uterus nearly always makes an attempt to expel any substance which is formed within its cavity, consequently polypi and fibrous tumors are, as a matter of fact, frequently extruded by its contractions ; but in the case of the latter, the expulsion seems to be of but doubtful occurrence, unless as the final stage of the process of spontaneous enucleation just spoken of.

I have purposely avoided, at present, entering into the question of the differential diagnosis of fibrous tumors, because I think I shall treat this part of the subject with greater advantage when considering that of ovarian disease, with which alone it is likely to be confounded, for to mistake a fibrous tumor for pregnancy, is hardly possible ; the size and shape may indeed resemble that of the pregnant uterus, but the slow increase

in its size, and the occurrence of menorrhagia, should alone in most cases, suffice to prevent error. There is one symptom, however, often present in a fibrous tumor, which may mislead the careless observer, and that is the occurrence of a *bruit de soufflet*. It is of but little value as a diagnostic sign, and I merely mention it to put you on your guard, lest you should be misled by its occurrence to suppose pregnancy existed. You must not, however, forget that pregnancy is not incompatible with the presence of a fibrous tumor, and a very serious complication it is.

LECTURE IX.

INFLAMMATION OF THE CERVIX UTERI—ULCERATION OF—SYMPTOMS
OF—TREATMENT OF BY LOCAL DEPLETION, NITRIC ACID—PELVIC
CELLULITIS—PELVIC HEMATOCELE.

THE great frequency with which inflammatory affections of the unimpregnated uterus occur, resulting, as they do in some of the most distressing and intractable ailments to which women are liable, renders the subject of inflammation of the womb, to which I propose to call your attention to-day, one of great importance.

The cavity of the uterus is divided into two parts by the os internum; the upper part, that of the body, is triangular in shape, and lined by a mucous membrane, which, according to the researches of Dr. John Williams,* becomes thickened at the approach of each menstrual period, then appears to undergo a process of fatty degeneration and rapid decay, and finally is disintegrated and cast off, forming, with blood and mucus, the menstrual discharge. It is of a light-gray color, and smooth on the surface. The lower part, commonly designated the cervical canal, is circular, bulging in its centre, and contracted at each extremity. It, too, is lined with mucous membrane, continuous with that of the body, but differing from it in being thinner, and in being arranged in transverse folds, which form the *arbor vitæ*, the interstices between which conceal numerous

* Obstetrical Journal, No. XVII, p. 324.

mucous follicles and glands. Both these portions may simultaneously be the seat of disease, or one may be attacked independently of the other.

When speaking to you on the subject of menstruation, I pointed out the important part which the mucous membrane lining the cavity of the uterus played in the performance of that function; how easily the discharge which at the catamenial epoch it pours out, might be checked, and the ill results to be anticipated from such an occurrence. But, in addition to affections following on interrupted or suppressed menstruation, an unhealthy condition of both the body and cervix is likely to occur as the result of abortion, or of imperfect recovery after labor at the full term, when the involution of the uterus being retarded, that organ remains enlarged and congested, a condition most favorable to the occurrence of inflammation. Other causes too, not so clearly traceable, produce congestion and inflammation of the cervix, and, as frequently, of the body of the uterus.

Inflammation of the cervix is never of a very acute character, but the cases we meet with in practice vary greatly in intensity. The more acute form has two well-marked stages. In the one, active congestion of the part exists, manifested by great vascularity of the mucous membrane covering the vaginal portion of the organ, which becomes of a bright pink color, and by engorgement and tumefaction of the substance of the cervix, which, however, feels soft and elastic to the touch. In the other, the mucous membrane, being denuded of its epithelial covering, presents the appearance of an irregular, abraded surface of a deep-red hue, which pours out a profuse muco-purulent discharge, and is studded with numerous papillæ. The os uteri is patulous, and its lips everted, while the cervical canal is blocked up by a thick, tenacious discharge, secreted by the cervical glands. This, in appearance, resembles the white of

egg, and is always pathognomonic of endo-cervical inflammation. If you succeed in removing it, and get a glimpse at the membrane lining the interior of the cervix, you will find it also to be of a bright-red color; we seldom see a case in the very early stage of the disease, the symptoms rarely being sufficiently severe to induce the patient to seek medical aid. But in general, ere long, the inflammation extends to the cervical canal, and then, her sufferings being increased, she applies for relief.

We have, at present, in the house, a well-marked example of inflammation of the neck of the womb, in the first stage, occurring in an unmarried woman. The mucous membrane covering the cervix is smooth, nor does abrasion at any point, exist; the os uteri is patulous, and a copious, transparent, tenacious discharge issues from the cervical canal, proving that its lining membrane participates in the disease.

Now contrast the appearances presented in this case, with those you saw in the patient occupying the opposite bed. S. B., æt. thirty-four, has had two children; her illness dates from the birth of the last, two years ago. The cervix is greatly thickened and indurated; its vaginal portion, which is of a deep-red color, instead of being smooth and even as in the other, is covered over with little red papillæ, which bleed on being touched, while a copious muco-purulent discharge, that has to be wiped away before the parts can be seen, exudes from its whole surface. The os uteri is very patulous, and is plugged with a mass of tenacious, opaque mucus, which, when removed, after much trouble, discloses a cervical canal, whose lining membrane is seen to be congested, and covered with large vascular elevations. Here you have an example of the second stage of cervical inflammation; the substance of the cervix is thickened as in the former case, but, in addition, induration exists, and the mucous membrane is denuded of its epithelium.

The surface thus exposed is covered with granular-looking elevations, which, indeed, have sometimes been mistaken for granulations; they are not, however, new growths at all, but merely the papillæ which abound in this situation, hypertrophied by the existence of the surrounding inflammation. Finally, you have a profuse muco-purulent discharge secreted from the diseased surface, the roughened condition of the mucous membrane with its enlarged and prominent papillæ secreting a muco-purulent discharge, being a secondary condition, the result of the previously existing inflammation.

The case I have just been alluding to affords also an excellent illustration of the condition termed "ulceration" of the cervix; a term the accuracy of which has been warmly disputed. Dr. Bennet defends its use, and, on the authority of Petit, defines ulceration as "a solution of continuity from which is secreted pus, or a puriform, sanious, or other matter."* But, as we usually associate the idea of ulceration with a loss of substance of greater extent than that produced by the mere removal of the epithelium, I am inclined to agree with the view held by Dr. Farre, that the term ulceration should only be applied to cases in which the loss of substance extends deeper. However, if Dr. Farre's definition be strictly adhered to when speaking of affections of the uterus, examples of ulceration of that organ will prove to be very rare. I have never seen a single instance of true ulceration of the cervix uteri, as defined by him, unconnected with specific disease; indeed, I do not believe that such occurs. All this, however, is a mere dispute about a term, and, although it is not strictly correct, still the word ulceration continues to be frequently applied to the condition we are considering.†

* "Inflammation of the Uterus," page 82.

† An admirable summary of the arguments for and against the theory of ulceration will be found in Dr. Graily Hewitt's work "On Diseases of Women."

But, cases less severe than the one of which I have been speaking constantly occur. In some there is mere abrasion of the vaginal surface of the cervix, a circle of limited extent surrounding the os uteri appearing red and abraded, a condition which terminates abruptly just inside the os; or, you may have cases intermediate in severity, in which the vaginal portion of the cervix being denuded of its epithelial covering, presents an irregular surface of a deep-red color studded with the hypertrophied papillæ I have already spoken of, the cervical canal, however, not being implicated in the disease. Such a surface as that which I have last endeavored to describe, almost invariably secretes a copious purulent discharge, and, in addition, there is usually a certain amount of vaginitis present. You had an excellent example of this in the case of Mrs. H., in whom the discharge was so profuse and weakening that it was for its cure she sought relief.

The milder forms of abrasion of the cervix are not of themselves of any great importance; they seldom give rise to distressing symptoms, nor do they necessarily cause sterility, even when as severe as in the case of Mrs. H., for she became pregnant long before the abrasion was cured; but then the mucous membrane of the vaginal portion of the cervix alone was engaged. It is quite otherwise when that lining the cervical canal is implicated, for in that case the os becomes patulous, its lips are everted, and a copious viscid discharge is invariably poured out by the cervical glands; this completely fills up the os, and is seen hanging from it as a rope of thick, semi-opaque mucus. Such a discharge is an effectual bar to conception, and is pathognomonic of cervical disease; whenever you see it you may at once pronounce that the patient is suffering from inflammation of the mucous membrane lining that canal. Perhaps the best name for this condition is *endocervicitis*, by many, however, it is termed *cervical catarrh*. In it, the lining mem-

brane, being congested, is of a deep-red color; subsequently, hypertrophy takes place, and the rugæ become prominent, while its surface is covered with numerous vascular papillæ. When this stage is reached, not only is the os patulous, but the cervical canal is relaxed throughout its entire length, as high at least as the os internum.

If you proceed to introduce a sound in a case such as I am describing, you will probably find it a matter of considerable difficulty. This difficulty is caused by the point of the instrument becoming entangled, first in one, and then in another, of the folds of the hypertrophied mucous membrane, and it is only after the lapse of some time and the exercise of much patience that these difficulties can be overcome and the cavity of the uterus reached. Some drops of blood are nearly certain to follow the withdrawal of the sound, which should not occur when the lining membrane of the cervical canal is in a healthy condition.

In addition to these local changes symptoms of a general character are invariably present; thus, the patient is nearly sure to complain of backache, and of pain and tenderness on pressure over the ovary, especially on the left side; pain, too, is frequently complained of along the edge of the false ribs. When this is severe, and particularly if it becomes aggravated at the approach of the catamenial period, I look on it as indicating that the disease has extended up to the os internum. Then, irritability of the bladder and often distressing pruritus are frequently present; and, after a time, menstruation is very likely to become profuse and weakening—indeed, not unfrequently it is for the cure of the menorrhagia that we are consulted. This was so in the case of Mrs. B., to whom I alluded when speaking of menorrhagia, and of several others whom from time to time we have had in hospital.

A very instructive case was that of the young married

woman, Mrs. ——. Her illness commenced soon after marriage; she did not suffer much pain, but latterly had hardly ever been free from a sanguineous discharge; there was also profuse leucorrhœa present. Before coming under my observation she had taken various astringents without benefit. The cause of the failure of this treatment was apparent, for on making a digital examination the cervix felt as soft as a piece of sponge, and on looking at it through the speculum, it presented an appearance which I can only compare to that of a large raspberry. The slightest touch was followed by copious bleeding. You saw that, with the view of checking the hæmorrhage, I brushed over the surface with the saturated solution of perchloride of iron in glycerin; this answered that purpose effectually; subsequently, as you may remember, I repeatedly applied the fuming nitric acid, and the part gradually assumed a more healthy appearance. She was discharged cured, but not till after the lapse of many weeks. I was inclined to attribute the condition of the cervix in this case to excessive sexual intercourse in a young woman of delicate constitution.

In the foregoing outline I have endeavored to trace the progress of a case commencing in inflammatory congestion of the substance of the cervix, in which the mucous membrane covering its vaginal aspect, participating in the disease, becomes after a time abraded; that lining the cervical canal also being implicated. This is a very common course for the affection to follow, and an example of it is afforded in the patient to whose case I have just drawn your attention. It is, however, far from being the invariable one; for, without doubt, inflammation in many cases first attacks the cervical mucous membrane, ulceration of its vaginal surface following; the inflammation and consequent induration slowly extending into the substance of the cervix.

But we may have cervical catarrh, indicating the existence

of inflammation of that canal, while the mucous membrane covering the lips of the uterus remain perfectly healthy. When this condition exists, we generally find that the case is one of long standing, and that it has crept on slowly and insidiously, the patient dating back the commencement of her illness many years. I shall refer to this condition again by and by.

Your treatment of cases of inflammation of the cervix uteri must be guided by the stage which the disease has reached, and the form which it has assumed, as well as by the patient's state of health. We seldom see the acute form till the stage of ulceration has been reached. It is too commonly the custom to treat all such cases on one method, namely, by applying nitrate of silver, either solid or in solution, to the surface of the cervix—a treatment in general altogether insufficient, and sometimes positively injurious. Bear in mind that you are dealing with inflammation, or, at least, the congestion of the organ, and it is rational that your first step should be to relieve that congestion by local bloodletting. There are two ways of effecting this; the one by the application of leeches, the other, by incising or puncturing the cervix. Leeching is a very troublesome and tedious process, as well as most uncertain in its results; at one time you cannot get the leeches to take at all, or at most not more than one or two, at another they will bite freely, and, perhaps, in spite of all the care you can take, will fasten on the vagina, and profuse bleeding may follow. I have seen such profuse bleeding follow the application of leeches as to compel me to plug the vagina; I therefore now, as a rule, rely on the other method, and practice it very much in the same way as recommended by Dr. Hall, of Brighton, in the *Lancet* for the 3d September, 1870.

Merely scarifying the surface of the cervix is not sufficient, especially in a case of a very chronic nature and accompanied by induration; I therefore always puncture the vaginal portion of

the cervix, tolerably deeply, in two or three places. The depth to which I make the point of the knife penetrate varies from $\frac{1}{8}$ to

FIG. 24.



$\frac{1}{4}$ of an inch, according as the cervix is soft and vascular, or firm and indurated; for in the former case it bleeds very freely, in the latter it is sometimes difficult to obtain a sufficient quantity of blood. Dr. Hall has had a knife specially made for the purpose by Coxeter (Fig. 24), but I often use a long, straight-backed bistoury, terminating in a very sharp point which, if the former is not at hand, answers very well. One great advantage of this plan of treatment consists in the ease and rapidity with which it can be performed. Having exposed the cervix, with an ordinary speculum, you make two or three punctures rapidly, and then allow the requisite quantity of blood to flow through the speculum, on withdrawing which, the bleeding, unless the part be very vascular, generally ceases; the operation seldom causes pain, if it does, it subsides in a few minutes. You can practice this treatment with equal facility in the wards of the hospital, in the extern department, in your own study, or at the houses of your patients.

You have seen how extensively I have carried out this system of local depletion, and how often considerable relief has followed its use. Of course, it is not invariably successful. I have found it productive of benefit even in cases of chronic inflammation of the cervix, although the induration then so constantly present often prevents our obtaining a sufficient quantity of blood.

My rule, then, in nearly all cases of inflammation of the cervix uteri is, first to relieve the congestion by puncturing the part. I only omit this when menorrhagia depending on a

granular condition of the cervix is present; for should such exist, depletion is in general unnecessary and appears sometimes to be injurious. Your object, in that case, should be to check at once the weakening discharge. This is best effected by applying freely to the diseased surface the strong nitric acid or a saturated solution of the perchloride of iron in glycerin, which is much less irritating than either the tincture or the liquor, and is generally sufficient, if applied freely, to check temporarily the bleeding. To apply it, you should always expose the cervix with one of Fergusson's glass speculums, and make your applications through it. However, this proceeding is but palliative, and as in all severe cases the membrane lining the interior of the cervix is implicated in the disease, it is essential to treat every portion of the unhealthy surface of that canal. In the majority of cases the cervical canal is relaxed, and the os uteri so patulous that this can be effected without difficulty. If this be not so, I sometimes introduce one or two lengths of the compressed sea-tangle, taking care that they pass through the os internum; on withdrawing these my usual treatment has been to apply the strong nitric acid, freely to the whole interior of the cervical canal, in the manner recommended in a previous lecture. This was the course adopted in the case of the woman S. B., of whom we have been speaking. I confined her to bed for three or four days subsequently, and then treated the still unhealthy surface by the application of a solution of tannic acid in glycerin of the strength of ten grains to the ounce. I strongly recommend the use of this application in cases of abrasion and inflammation of the cervix after local depletion has been practiced; it is especially useful if vaginitis be present. Saturate a pledget of cotton in the glycerin, pouring about half a drachm of it into the palm of the hand, and soaking it up with the cotton. Repeat this process several times till the cotton is thoroughly saturated, and then,

attaching a piece of string to facilitate its removal, introduce it up to the os uteri through the speculum and leave it there for twenty-four hours; the patient can withdraw it herself by means of the string. This treatment is often productive of great benefit; the tannin acts as an astringent, while the glycerin produces a copious watery discharge. The result of this combined action is, that the surface of the cervix, on the withdrawal of the cotton, looks paler and altogether much cleaner and healthier. If much irritation exist in the vagina, omit the tannin and use plain glycerin, as it relieves the vaginal congestion more effectually than when it contains an astringent. It was from Dr. Marion Sims's excellent work on *Uterine Surgery* that I first learned the great value of glycerin in the treatment of uterine disease, and I daily appreciate it more. Remember, however, that glycerin must be very freely used; I commonly employ from half an ounce to an ounce for a single application. The quantity which even a small pledget of cotton will absorb is surprisingly large.

If the nitric acid be freely applied to the whole length of the cervical canal, and the unhealthy surface be subsequently dressed with the glycerin of tannin, you will in many instances effect a cure in the course of a few weeks. We had an example of this in the patient alluded to. If the surface be indolent, it may be necessary to apply to it occasionally, a solution of nitrate of silver, of the strength of from thirty to forty grains to the ounce. In cases of less severity, I sometimes use, instead of the nitric acid, the zinc points introduced into practice by Dr. Braxton Hicks; or, if the nitric acid has failed to effect a cure, I introduce them subsequently; they are often productive of great benefit, especially when no induration exists. They cause, however, a good deal of pain and considerable local irritation.

From time to time you will meet with cases in which the

various modes of treatment I have recommended, including the repeated application of the fuming nitric acid, will fail to effect a cure; this is likely to occur when the entire substance of the cervix is implicated; when both the mucous membrane lining its canal and that covering its vaginal aspect, being in an unhealthy condition, are studded with vascular papillæ, and at the same time, the cervix itself is greatly engorged, and frequently, in my opinion, also œdematous. Menorrhagia was present in all the cases of this form of uterine disease which have come under my observation; all of them, too, were of considerable standing.

Take as an example the case of Mrs. —, who has only been recently discharged from hospital; her illness commenced three and a half years ago, and appears to have had its origin in a well-marked attack of inflammation; for she suffered at the time from acute pain over the left ovary, which only yielded to the application of leeches and other antiphlogistic treatment. Latterly, she experienced much pain before each menstrual period, while the flow became very profuse and lasted for seven or eight days. The uterus proved on examination to be considerably enlarged, and was also anteflexed; the cervix was elongated, tumefied and engorged; its vaginal surface was covered with large, highly vascular granulations, from which the hæmorrhage evidently proceeded; a similar condition existed in the cervical canal. I therefore dilated it, and applied the strong nitric acid, freely, to the diseased surface, but I was disappointed in the result. The next menstrual period was so profuse that I had to plug the vagina, and, though I applied the nitric acid repeatedly, she improved very slowly indeed. I now determined to have recourse to potassa fusa, and to destroy with it, if possible, the whole of the diseased surface. Whenever this caustic is used, it should be applied through a glass speculum and rubbed freely against the part, till you are sat-

ified that the tissues have been destroyed to a considerable depth; a pledget of cotton saturated in vinegar should be previously inserted between the lower lip of the os uteri and the edge of the speculum, so as to neutralize any of the potash which may escape, and which would otherwise irritate the vagina; that canal should also, as a further precaution, be washed out with vinegar immediately after the application. In this case I cauterized not only the exposed surface of the cervix in the manner described, but I also passed the stick of caustic potash to the depth of at least half an inch into the cervical canal; this proceeding did not cause much pain. The only local treatment I subsequently adopted, was placing in the vagina daily, pledgets of cotton saturated with glycerin. Of course I confined the patient to bed for several days. The slough was worn off in less than a week. The surface thus exposed presented a very healthy appearance and healed up rapidly, so that at the expiration of about three weeks I was able to allow the patient to return home cured.

In these severe cases, the total destruction of the diseased surface by caustic potash is by far the most effectual means at our disposal; and if care be taken to limit the application to the cervix, and if the vagina be washed out freely immediately afterwards with vinegar, no injury to that canal nor any unpleasant consequences need be feared.

The milder cases of abrasion of the cervix will generally yield to the use of nitrate of silver. Tincture of iodine sometimes seems to agree, but I do not rely on it. I have, however, noticed that its use seems sometimes to allay the backache from which the subjects of uterine diseases suffer so much. I also use a saturated solution of carbolic acid in spirit, and in mild cases it answers very well.

In concluding my remarks on the treatment of the more acute forms of cervical inflammation, especially when, as nearly

always is the case, the disease implicates the membrane lining its canal, I must repeat that you have to deal with a most troublesome, and often an intractable, affection, and one which can only be cured by active and energetic measures.

I stated just now, that that peculiar form of abdominal inflammation known as *pelvic cellulitis* may occur in patients suffering from chronic disease of the uterus. In one case it evidently followed on the application of the tincture of the perchloride of iron to the cervix, used with the view of checking profuse menorrhagia; it may, however, be caused by the application of any caustic. Exposure to cold is, however, by far the most common cause, and is specially likely to induce an attack on women recently confined, or who have recently aborted. Cellulitis, too, is liable to occur after operations about the uterus.

The term *parametritis* is by some authors preferred to that of *pelvic cellulitis*. In my opinion this is unfortunate. I quite agree with Dr. Fordyce Barker in thinking that the former is not warranted either "by precedent or analogous usage," and I greatly prefer the term *pelvic cellulitis*, by which is meant inflammation of the cellular tissue around and in the neighborhood of the uterus, or occurring in any part of the pelvis. It is right, however, that you should bear in mind that *parametritis* is synonymous with *pelvic cellulitis*, as is also *perimetritis* with *pelvic peritonitis*.

As we have at present a case of this affection in the house, I shall take the opportunity of calling your attention to the subject. This patient was admitted in a very anæmic condition, having lost a great quantity of blood. She stated that she had aborted three weeks previously, and on examining her, it was evident that the hæmorrhage was kept up by the retention of a portion of the placenta. I plugged the vagina, and directed her to have thirty drops of the liquor ergotæ and three of the solution of strychnia every third hour. This produced

sharp uterine action, and on withdrawing the plug, after the lapse of twelve hours, the placenta was found in the vagina, and the hæmorrhage immediately ceased. Three days subsequently she had a rigor, and complained of sharp pain in the region of the uterus; pressure over the abdomen, however, caused comparatively but little distress. Vomiting soon after set in, and for the next forty-eight hours was incessant; indeed this distressing symptom did not entirely cease for five days. The pulse was very quick, as it always is in these cases. On making a vaginal examination immediately after the rigor had occurred, nothing could be detected, but the vagina felt hot, and she complained of the pressure of the finger causing pain. On repeating the examination, after the lapse of twenty-four hours, the uterus was found to be immovable, being fixed by a firm hard swelling, which extended all round it. This in the posterior *cul-de-sac* assumed the form of a well-defined tumor, which pressed against the rectum, and thus explained a symptom she now complained of, namely, a constant desire to defecate; all her attempts, however, to do so proved useless. Now, what has occurred here is, that inflammation, which has resulted in the rapid effusion of serum, has attacked the cellular tissue situated around the uterus and within the folds of the peritoneum.

In this case there are three points worthy of your special attention; namely, the hardness of the swelling as felt through the vagina; the pressure on the rectum which this swelling caused; and the distressing vomiting from which she suffered. The hardness is due to the infiltration of fluid into the cellular tissue surrounding the uterus. This effusion may be circumscribed, so as to form a well-defined tumor, or be general, as in the present case; its hardness, and the rapidity of its formation, being its distinctive features.

The pressure which the swelling exercises on the rectum

often causes much distress, and may, by totally obstructing the bowels, even prove fatal. Let me impress on you the necessity in such cases of avoiding the exhibition of purgatives. The obstruction is mechanical, and cannot be overcome by exciting the peristaltic action of the bowels. On the contrary, it is your duty to quiet that action by the exhibition of opiates. This was the treatment adopted in the case at present in the house. She took half a grain of opium every third hour, while enemata of tepid water were administered twice daily, with the view of aiding the descent of any fecal matter which might be impacted in the lower part of the bowel. The opium, however, had no effect in checking the distressing vomiting, I therefore tried the subcutaneous injection of morphia, and with great success; the injection of one-sixth of a grain always quieted her stomach for two or three hours. Now this is a fact worth bearing in mind. Vomiting frequently follows the subcutaneous injection of morphia, but I have several times seen it check reflex irritation of the stomach depending on uterine disease. Vomiting is a frequent, I was almost going to say invariable, accompaniment of pelvic cellulitis. This, I believe, is usually due to the endometritis which generally coexists. In the case at present in hospital, the treatment adopted, in addition to the subcutaneous injection of morphia, was keeping the abdomen constantly covered with warm linseed meal poultices, and the internal exhibition of opium and of hydrocyanic acid. Food could not for several days be retained on the stomach. She had milk and lime-water, and milk and soda-water in small quantities, frequently, and also beef tea; the latter was also administered *per rectum*. She is now slowly recovering; the case will terminate by resolution.

The tendency of pelvic cellulitis is to recovery; it is always a tedious disease, but by carefully sustaining the patient's strength with unstimulating nourishment, and by the avoid-

ance of lowering treatment, such as the exhibition of mercury, the patient generally recovers. In some cases resolution takes place, the swelling being slowly absorbed, but sometimes it terminates in the formation of an abscess, which may discharge into the rectum, into the bladder or vagina, or open externally. The chief danger consists in the risk, which always exists, of the inflammation extending to the peritoneum. A little care will enable you to discriminate between peritonitis and an attack of cellulitis; pressure is in the latter much better borne than in the former, while a vaginal examination if carefully made will in general set the question at rest, by detecting the existence of a firm, hard swelling, the uterus being fixed. The patient whose case I have just referred to suffered from an acute attack, but more commonly the disease creeps on insidiously, and its existence may for a long time escape notice; a careful vaginal examination should, therefore, in all cases be instituted. As an example of this latter form the case of another patient, J. S——, is instructive. She was admitted suffering from very profuse and weakening menorrhagia, and as the cause was not apparent, the uterus was dilated, and the intra-uterine mucous membrane found to be in a state of granular degeneration. For the cure of this nitric acid was applied. No pain followed, and at the end of a week the patient was convalescent. But on being allowed to get up, she exposed herself to cold, and an attack of sharp fever followed, accompanied by pain referred to the pelvis. After a time a hard swelling could be felt posteriorly and laterally fixing the uterus. She was treated by the exhibition of sedatives, rest, warm baths, etc.; the pain subsided, but the swelling round the uterus remained, and after a lapse of six weeks a copious discharge of matter *per rectum* proved that suppuration had taken place, and that the abscess had burst into the bowels. Her convalescence was tedious, but she was finally discharged cured. This fortunate result does

not, however, always occur. In not a few instances the patient is run down by hectic, and the case terminates fatally, notwithstanding our best efforts to save life.

There is one affection, of more rare occurrence, with which pelvic cellulitis is specially liable to be confounded: I allude to those cases in which an effusion of blood takes place into the pelvic cavity. To this the term of *pelvic hæmatocele* is applied.

In considering this affection it is necessary to bear in mind that the effusion of blood is not the disease, it is always the result of some lesion or abnormal condition, and though the extravasated blood may become a source of danger to the patient, it is only a secondary, not a primary cause.

Blood may be poured out into the pelvic peritoneum in one of three ways.

1st. It may escape from the Fallopian tubes during, or immediately before, the occurrence of a menstrual period.

2d. It may be poured out from a ruptured bloodvessel in the ovary, Fallopian tube, or broad ligament.

3d. It may be due to the rupture of the cyst in cases of extra-uterine foetation.

For the occurrence of an escape of blood from the Fallopian tubes, it is, I think, necessary to suppose that some obstruction must exist to the exit of the menstrual discharge—a conical cervix and contracted cervical canal, acute ante flexion of the body or the presence of a tumor pressing on or blocking up the os internum, would be such. It is also extremely probable when a reflux of blood takes place along the Fallopian tubes, that the exudation of the menstrual blood from the lining membrane of the uterus is both rapid and copious.

The diagnosis of pelvic hæmatocele is often very difficult, and is specially so in the form under consideration. The blood almost invariably gravitates into the recto-uterine *cul-de-sac*,

consequently a swelling is formed there, but unless the loss has been so considerable as to produce a shock, the patient may not at first seek for medical advice. After a time, however, the extravasated blood excites inflammation, and then we have a patient with all the symptoms of pelvic inflammation, in whom also a well-defined swelling exists, occupying the posterior *cul-de-sac* of the peritoneum, the uterus being forced upwards against the pubes. I feel confident that attacks of pelvic cellulitis and pelvic peritonitis occurring at or near a menstrual period, are not unfrequently pronounced to be hæmatocele, the two former being of frequent occurrence, the latter rare. To form a correct opinion, a careful consideration of the history of the case, as well as of the symptoms which present themselves, is essential. In hæmatocele the access of the attack is sudden. The patient, without any premonitory symptom, is attacked with pain, and may become faint and cold; after a time there is reaction, to be followed probably by the symptoms of pelvic peritonitis; at the same time a vaginal examination will detect a tumor behind the uterus, which, at first soft, becomes gradually harder, this hardening being due to the coagulation of the blood.

In pelvic cellulitis this train of symptoms is reversed. The patient most probably will experience those premonitory of an ordinary febrile attack, namely, a chill, or even a rigor, followed subsequently by an accession of pain, and the gradual formation of a hard swelling round the uterus. This swelling is from the first hard and unyielding, whereas in hæmatocele the tumor, at first soft, gradually becomes harder. The foregoing remarks refer more especially to that form of hæmatocele due to the escape of blood from the Fallopian tubes, and which I believe to be of very infrequent occurrence. When it is due to the rupture of a bloodvessel in the ovary or Fallopian tube, the symptoms are likely to be much more severe

and marked, namely, sudden collapse, coldness of the extremities, and those symptoms which usually announce a severe shock. When such occur, with the simultaneous formation of a swelling behind the uterus, the diagnosis can hardly be doubtful, while if a woman in whom the symptoms of pregnancy exist is seized with sudden pain of an acute character, and that a swelling is detected behind the uterus, the probability of extra-uterine foetation, with rupture of the cyst, is obvious, and this conjecture would be strengthened, if, in addition, the sensation of something having given way be experienced by the patient.

Hæmatocele occurring as a result of extra-uterine foetation, or due to the rupture of a bloodvessel in the ovary, generally terminates fatally, and the treatment must depend on the nature of the symptoms. If collapse be present, the ordinary means employed to counteract this must be had recourse to, and among these the hypodermic injection of ether should not be omitted, half a drachm or more being injected into the fleshy part of the thigh, and repeated at short intervals of time. Care, however, must be taken not to induce excessive reaction, or the hæmorrhage might recur. Pain, generally very intense, is also under such circumstances invariably present, and demands the free administration of opium. But these cases, though so alarming, are not those which demand exercise of the greatest skill; it is those cases whose invasion is less marked, and whose course is slow, which often tax our judgment to the utmost; possibly the tumor may gradually diminish in size, and as the symptoms of inflammation subside, may disappear, absorption having taken place, but it is quite as likely that the tumor may become softer, that fluctuation may be detected, that the temperature may again rise, and we become convinced that suppuration is about to take place. With these changes the danger of septicæmia becomes imminent.

Under such circumstances the puncturing of the tumor sometimes becomes a necessity, but it should not be undertaken unless the symptoms become urgent, and that no hope of the fluid discharging itself through the rectum or vagina remains. If the operation be decided on, an aspirator should in the first instance be employed, and the entrance of air into the cyst, if possible, carefully prevented, but often the contents are too solid to be thus evacuated, and a free incision into the posterior *cul-de-sac* of the peritoneum may become unavoidable. Fortunately these cases are very rare, and of those which do occur, comparatively few demand surgical interference.

LECTURE X.

CHRONIC INFLAMMATION OF THE CERVIX UTERI—INDURATION OF CERVIX—TREATMENT OF, BY POTASSA FUSA; BY LOCAL DEPLETION—ENDOMETRITIS—ENDOCERVICITIS.

IN my last lecture, I gave you an outline of the history and treatment of the more acute forms of inflammation of the cervix terminating in congestion and thickening of the mucous membrane lining its canal, and of the follicles with which that membrane is studded, while its vaginal portion, denuded of its epithelial coat, is covered with numerous vascular papillæ; these little bodies, projecting as they do, from a rough and abraded surface, and secreting a copious muco-purulent discharge, having been sometimes mistaken for granulations. The term ulceration, is often applied to the condition I have described: a term, the correctness of which is very doubtful, there being no excavation, and but little loss of substance, while the discharge is merely the ordinary product of inflammation of a mucous membrane.

I shall now proceed to direct your attention to those still more common cases of, what we must call, chronic inflammation of the cervix. In it you have considerable thickening and induration of the whole substance of the cervix, which feels hard, and frequently is very sensitive to the touch. A vaginal examination or the introduction of a speculum causes considerable pain, while sexual intercourse may, for the same reason, be unbearable. We frequently find this condition

associated with flexions of the uterus; when these occur, the fundus generally participates in the sensitive condition of the cervix.

On exposing the cervix with a speculum, its surface will frequently be found to present its normal appearance. If any abrasion exists, it will generally be confined to a narrow rim surrounding the os uteri, which is frequently patulous, and, in women who have borne many children, sometimes nodulated and irregular, this condition being apparently due to the slight lacerations which may have taken place during labor. In addition, you not unfrequently have the glairy discharge issuing from the lips of the os uteri, which is pathognomonic of disease of the cervical canal. These cases of chronic inflammation and induration of the cervix, with little or no abrasion of the mucous membrane, are met with constantly, especially among women of the lower class, who leave the recumbent posture and engage in their ordinary avocations a few days subsequent to delivery or abortion. But it is far from being restricted to them; you will meet with numerous examples of it in the upper classes also.

I do not think that there is any affection more distressing than chronic inflammation of the cervix. The pain in the back, the ovarian pain, and the pain felt along the inside of the thigh, is often even more severe than that experienced in the acute form. The unfortunate patient never seems to lose it even for a day, while it is sure to become aggravated by fatigue, by exposure to cold, and by the approach of each menstrual period. In addition, irritation of the bladder, manifested by frequent desire to micturate, often becomes a very troublesome and distressing symptom. This symptom, as pointed out by Dr. Churchill, is one, common, no doubt, to other affections of the uterus, but I think I have observed it more frequently in conjunction with chronic inflammation of the cervix than with

any other; unless, indeed, it be when anteflexion of the organ exists. In fine, though not likely, in itself, to shorten life, chronic inflammation of the uterus often renders the patient little better than a confirmed invalid, and makes life itself a burden.

The constant distress, and even actual pain, which patients suffer when laboring under chronic inflammation of the cervix, frequently gives rise to the suspicion of the existence of cancer; but the mobility of the uterus, the absence of hæmorrhage, and of a fetid discharge, will generally enable you to assure your patient, that, though likely to be for a long time a sufferer, she is not laboring under malignant disease. The induration, too, resulting from chronic inflammation of the cervix, is very different from that caused by the deposit of cancerous matter, the surface in the former being smooth, in the latter, nearly always irregular, and frequently presenting, at one point, a sharp, well-defined edge, indicative of the existence of cancerous ulceration. I have known the nodulated condition of the lips of the uterus, which is sometimes met with in women who have borne many children, and in whom the cervix has become indurated, to be mistaken for malignant disease; but these irregular projections, surrounding, as they do, the os uteri, are very different in feel from those produced by cancer. The induration which takes place in cases of chronic inflammation of the cervix is, according to Dr. Bennet, due to the effusion of plastic lymph in the tissue of the cervix.

I have already noticed that the occurrence of extensive abrasion of the vaginal surface of the cervix is comparatively rare in these cases; it is not easy to explain this circumstance. I am, however, inclined to think that the access of the disease is so very slow, that, while lymph is gradually deposited in the tissues of the cervix, the mucous membrane escapes being implicated; it is different, however, with respect to the lining

membrane of the cervical canal, which is frequently engaged to a greater or less degree; it is not vascular and engorged as in the more acute forms, but thickened and hypertrophied. In fact, whilst in the acute form, you have a soft, tumefied cervix, its surface denuded of epithelium, and secreting a copious muco-purulent discharge, the cervical canal participating in the disease, and menstruation at the same time being nearly always profuse, you have in the chronic form, a hard, indurated cervix, frequently covered with an apparently healthy mucous membrane, while a copious glairy discharge, indicative of chronic inflammation of its lining membrane, is seen to issue from the cervical canal, menstruation being almost invariably diminished in quantity. These cases have long been the opprobrium of obstetric physicians, while their extreme frequency give them an importance which the direct effects they exercise on the duration of life do not warrant.

The modes of treatment suggested for the cure of this affection have been very numerous. Nitrate of silver, nitric acid, the nitrate of mercury, and iodine have been all repeatedly tried with the like result, and that generally is,—failure. Equally inefficacious, as far as the local disease is concerned, but probably more injurious to the general health, have been the long courses of the iodide of potassium, and of the bichloride of mercury, to which such patients have been subjected. In my opinion, medicines are nearly useless in this disease.

The failure of all ordinary means, induced the late Sir James Simpson to try what good could be effected by the employment of potassa fusa, applied directly to the indurated cervix, with the view, “partly of destroying the indurated tissues by direct decomposition, and partly to soften down the remainder by new inflammatory action.” He found it “far more manageable, speedy, and certain than any other method.” I have, myself, used the *potassa fusa* with success, and I have never

seen any unpleasant consequences resulting from its application. I do not, however, rely on it in cases of chronic inflammation of the cervix ; still I do not hesitate to use it, should the means I usually employ fail to effect good results.

I have already (page 177) explained to you the mode in which this powerful caustic should be applied, and the precautions you should adopt to prevent its injuring the vagina, and therefore need not repeat them here. I may, however, add that when much induration exists, one application will seldom be sufficient, and that it may be necessary to apply the caustic a second or even a third time, after the lapse of two or three weeks.

Another valuable means in the treatment of these cases consists in the application to the hypertrophied cervix of the actual cautery ; but, instead of a metal rod heated red-hot, I now generally use ignited charcoal pencils, specially prepared for the purpose. On another occasion* I shall give you full directions as to the preparation and mode of using these.

Dr. Greenhalgh treats such cases as these I now speak of by the application of iodized cotton to the cervix. The cotton is first uniformly saturated with glycerin ; a strong solution of iodine is then added and equally diffused under pressure in a closed vessel ; twenty per cent of iodine may thus be combined with the cotton.† The size or weight of the pledget of cotton to be used is, therefore, determined by the quantity of iodine required. A pledget of the requisite size is placed in contact with the cervix, and outside this a roll of cotton saturated with glycerin ; strings are attached to these to enable the patient to remove them when necessary. The iodized cotton doubtless

* See Lecture XVII.

† The iodized cotton can be had of Messrs. Savory & Moore, 143 New Bond Street, London ; or of Graham & Co., 30 Westmoreland Street, Dublin.

exerts a marked influence on the cervix, and many cases derive considerable benefit from its use; but I find, on the other hand, that not a few patients are unable to tolerate the strong taste of iodine which is perceived in the mouth in a very few minutes after its application, and remains for a long time. In some patients, too, it produces considerable irritation of the vagina, though in the great majority of cases the glycerin prevents this occurring.

I find that much relief can be obtained by repeatedly puncturing the cervix and abstracting blood by this means locally. Let me call your attention to some of the cases which have recently been treated in this manner in our extern department. M. W., five years married, has never been pregnant. For two years past she has suffered constantly from pain over the left ovary, from pain along the edge of the false ribs on that side, and from backache, always more severely before and during each menstrual period; the flow has greatly diminished in quantity, and is still progressively lessening; the cervix was elongated, indurated, thickened and very tender to the touch; copious cervical catarrh was also present. The diagnosis was obviously chronic inflammation and induration of the cervix uteri with inflammatory hypertrophy of the mucous membrane lining the cervical canal. The cervix was punctured, and the operation repeated at intervals of a week; the pain steadily decreased in severity, and after the lapse of six weeks she had obtained such relief that she considered herself to be perfectly well; no other treatment was adopted. This patient was not cured, for, like most persons of her class, she could not be induced to continue her attendance when once the urgent symptoms were relieved.

Here is another example in which the same treatment was adopted: Mrs. W., æt. forty, had one child nineteen years ago, never pregnant since. Catamenia regular till seven months

ago, since then they have appeared but twice, the last time being three months ago. Complained of backache and pain in right side, shooting down into hip; she also suffered from profuse leucorrhœa. Cervix in a state exactly similar with what I pointed out to you as existing in the last case. She first presented herself on the 22d of April. On that day I punctured the cervix, which bled freely. May 2d. Again extracted blood by puncturing cervix; *states that she menstruated two days after last visit.* May 13th. Much freer from pain; cervix again punctured. This was repeated weekly, until the 20th of June. On that day, I find the following entry in my note-book: Is much easier; has menstruated without pain. June 27th. Quite free from pain; cervix still indurated but no longer tender to the touch. Here was a woman in whom, previous to the adoption of local depletion, menstruation was irregular, scanty and painful, while she suffered constantly from distressing pain both in the back and side. You have seen the benefit she has derived from this treatment.

But I should only weary you by detailing the particulars of the numerous cases I have treated in this manner. Most of you have seen them and are capable of judging of the effects for yourselves: I cannot, however help alluding to that of one woman, whose sufferings were extreme.

J. D., æt. thirty, married seven years, has never been pregnant; for the past year has suffered from constant and severe pain in the left groin, also over left ovary, and above the pubes. Bladder extremely irritable, micturition painful, catamenia very scanty and irregular, sometimes not appearing at all for several months; uterus low in pelvis and very tender to the touch, fundus retroflected. Sexual intercourse has become so painful that she cannot now permit it at all. On the occasion of her first visit, on the 12th of February, I ordered her to

have a saline purgative, and introduced a small-sized Hodge's pessary, hoping that the support it would give the retroflected womb might afford some relief. In this I was disappointed; the organ was too tender to admit of the instrument being worn for any length of time, and I had to remove it after the lapse of three days. For the four following months, she presented herself at least once a week in the out-patients' room, but her condition did not improve, indeed she became worse, and she often could not straighten herself, so great was the pain she suffered. During this period I tried every possible form of medical treatment without effect. On the 20th June I decided on puncturing the cervix, and from that she steadily improved. I repeated the operation at intervals of five or six days. After a few weeks she was so much easier that she only attended about once a month. On each occasion the treatment was repeated with marked benefit. Menstruation, though scanty, appeared at regular intervals, and she was so much better as to be able to resume her regular occupation—that of working in a market garden. She presented herself the other day, after an interval of three months. She then stated that the menstrual flow now appears regularly, that she suffers but little pain, and can permit sexual intercourse. The uterus is still retroflected and will, I believe, always remain so, but it is not painful to the touch. It is well worth your while bearing this case in mind. Previous to practicing local depletion, I had, for four months, tried every other means of treatment I could think of, without effecting the least good. You all have seen the benefit resulting from that finally adopted. This case is instructive too in another point of view as proving that the patient's sufferings were due to the state of chronic inflammation which was present, and not to the retroflexion.

I have hitherto spoken only of inflammation of the cervix uteri and of the lining membrane of its canal, but the body

also is liable to be affected in a similar manner, and cases of chronic metritis and of endometritis are very common.

I wish you to understand, that when I speak of endometritis I refer to inflammation of the interior of the body of the uterus only, that is of the part lying above the os internum. This term is used by some, I think, erroneously, so as to include inflammation of the canal of the cervix also. Inflammation of this latter portion should be spoken of as endocervicitis, a term made use of by Dr. Marion Sims, and which I prefer as being more definite than any other.

Endometritis, formerly looked on as a rare affection, is, now that its symptoms are better known, recognized as a disease of frequent occurrence. It is met with in women who have never been pregnant, and not seldom even in virgins; it also occurs frequently as a result of imperfect involution of the uterus, and in aggravated cases may terminate in complete disorganization of the intra-uterine mucous membrane. Such extreme cases are, however, rare.

All cases of chronic endometritis naturally divide themselves into two classes, namely, those which occur in women who have borne children, and those who never have been pregnant. The course, symptoms, and treatment of these two classes are essentially different. I will speak first of the disease as it occurs in those who have borne children.

In the great majority of such cases the patient's attention will be attracted to her condition by the occurrence of derangement of the menstrual function, which generally in the first instance, at least, becomes profuse, and often painful; leucorrhœa, too, is generally present.

On proceeding to examine the patient the cervix will be found to be thickened, the os patulous, perhaps the lips everted, and possibly in a state of granular erosion, while a copious discharge, thick, opaque, and tenacious, issues from it; the cer-

vical canal also is patulous, and the sound will pass with ease through the relaxed os internum. Nevertheless its introduction often causes pain, either at the os internum, or when its point reaches the fundus. If the sound causes pain as it passes through the os internum, menstruation is, I believe, always painful; but if the extreme sensitiveness is confined to the fundus, this may not be so. Dr. Routh is of opinion that in some instances that portion of the endometrium situated between the openings of the Fallopian tubes on either side may alone be diseased, and he terms this "fundal endometritis." I much doubt, however, if the affection be ever limited to so circumscribed an area.

As the disease progresses the mucous membrane lining the body of the uterus becomes disorganized. This is manifested, as already pointed out, by derangement of the menstrual function, which becomes painful, or profuse, or both, and it is not till this stage is reached that, as a rule, the patient seeks medical aid; doubtless she will in general complain of pain in the back, of a feeling of weight in the pelvis, and perhaps of a bearing-down sensation, but when contrasted with the disease as it occurs in the unmarried or sterile woman, endometritis in the woman who has borne children produces comparatively little discomfort, and except when the patient is run down by profuse or constantly recurring hæmorrhages, comparatively little constitutional disturbance.

Here is a typical case: Mrs. —, aged 25, gave birth to her first and only child three years ago. She nursed but a few months, and then, menstruation recurring normally, she weaned the child. Shortly after her husband became ill, and for many months she tended him by day and night, notwithstanding which her general health continued tolerably good, and it was not till after the lapse of quite a year that the occurrence of repeated attacks of profuse menstruation, latterly

accompanied by acute pain, compelled her to seek relief. In her case the os uteri was very patulous, and the cervical canal blocked up by a mass of thick, semi-purulent mucus. When the point of the sound reached the os internum she complained of sharp pain. I treated this patient by the application of carbolic acid to the fundus, applying it twice a week for about two months. The first menstrual period after the commencement of this treatment was perfectly painless, but was very profuse, and lasted for seven days; the next was equally painless, and was over in four days. Since then the function has been perfectly normal, and the uterine catarrh has disappeared.

The treatment just mentioned will often prove efficacious, provided the case be of recent origin; but if of long standing, and if copious uterine catarrh or menorrhagia be present, more active treatment is called for.

In all cases where much tenderness on pressure exists, local bloodletting should first be practiced; this is a rule from which I make few exceptions. Local bloodletting relieves the pain to a considerable degree, and certainly favors the action of other treatment, whether that be medicines administered by the mouth, or applications made directly to the diseased surface.

Local depletion is a very old practice of recognized value. It has, however, fallen into disuse, apparently because, when carried out by means of leeches, it is troublesome, and, moreover, is often attended with unpleasant consequences. Sometimes the leeches will not bite, at other times they will fasten on the vagina and give rise to bleeding, alarming in quantity and difficult to stop. Sometimes, too, notwithstanding every precaution, a leech will make its way into the os uteri. When this has occurred to myself, as it has on two occasions, the leech returned soon, but a patient assured me that on one occasion a leech remained *in utero* for twelve hours, and gave rise

to no small anxiety. For these reasons the application of leeches to the cervix is unsatisfactory ; but I am decidedly of opinion that, as a preliminary treatment, local depletion is most valuable.

I practice it, as you are aware, by puncturing the cervix. If the cervix be soft and spongy it must be done cautiously ; one or two punctures, one-eighth of an inch in depth, will generally be followed by sufficiently free bleeding ; if not, deeper ones should be made, and if the cervix be indurated, the point of the knife must be made to penetrate a considerable depth. The quantity of blood taken can thus be regulated with nicety ; but a few minutes are occupied in the operation, and no pain is caused. The bleeding generally ceases the moment the speculum is withdrawn ; if it should not, a pledget of cotton must be placed in the vagina, and left *in situ* for a few hours ; but it is very rarely indeed that even this is necessary. Local depletion does not produce as beneficial results in cases of corporal endometritis as it does in cases of cervical congestion ; the benefit, therefore, resulting from the practice will be in an exact ratio to the amount of cervical disease which may exist.

Local depletion is, however, in cases of endometritis, but a preliminary step ; it is invariably necessary to adopt treatment which will act directly on the diseased surface—that is, on the mucous membrane lining the body of the uterus.

There are three methods of making applications to the interior of the uterus : one is by injecting fluids into its cavity ; another, the introduction of a piece of solid caustic into it by means of Simpson's intra-uterine *porte-caustique* ; and a third is the passing up to the fundus, of a stillette armed with a layer of cotton, saturated with nitric acid, carbolic acid, or some other active agent.

The first of these methods I have never tried, as it is a prac-

tice not free from danger; and not alone that, but also much less certain and satisfactory in its results than either of the others.

The second I have frequently practiced, in cases of imperfect involution of the uterus. Where no inflammation exists its effects are most excellent; but it is not, so far as my experience goes, a satisfactory method of treating any form of endometritis.

The application of strong caustics to the interior of the uterus, of which, in my opinion, the fuming nitric acid is by far the best, is a practice now extensively carried out, not only in this city, but also in America.

However, some practitioners have still a great dread of applying powerful caustics to the interior of the uterus, a fear which is totally groundless. Nitric acid seldom causes any pain whatever, if properly applied;* in this respect its application differs entirely from the injection of even weak solutions of caustics into the uterus, grave symptoms, and even death, having followed the latter practice. Therefore, while I advocate the use of nitric acid and of the solid nitrate of silver as safe applications to the interior of the uterus, I strongly object to the intra-uterine injection of any fluid in the treatment of the class of cases under consideration.

Of numerous cases of endometritis, in the treatment of which I used nitric acid, I shall give very briefly the details of the following. The patient was a widow, and her last child had been born twenty years ago. Of late menstruation had become profuse, and was attended with very severe pain. She also suffered from constant pain in the left side, felt most intensely at a point midway between the spine and crest of the ilium. This pain, at first experienced only at each menstrual

* For directions as to the mode of using nitric acid, see Lecture XVII.

period, became, after a time, constant, being aggravated in intensity during the periods, sometimes, indeed, becoming at those times absolutely intolerable; there was also tenderness over the right ovary. The uterus was tender to the touch, enlarged, retroflected. The introduction of the sound caused much pain, and some blood followed its withdrawal. The cervix was swollen and much engorged. To relieve this condition I punctured it. It bled freely, and, hoping to lessen the ovarian congestion, I directed twenty-five grains of the bromide of potassium to be taken thrice daily. This treatment was continued in for some time, blood being extracted locally at intervals of five days. The result was that the cervical engorgement was removed, menstruation became somewhat less profuse, and the ovarian pain much mitigated in severity; but, treatment having been discontinued for a short time, the whole train of bad symptoms returned; and I became convinced that no permanent relief would be obtained unless I treated the interior of the uterus directly. I accordingly explained my views as to the nature of her case to this lady, and to her son, himself a surgeon. She consented to undergo any treatment which promised relief from her sufferings. I commenced by dilating the cervical canal so freely that I passed my finger through the os internum and up to the fundus of the uterus. As I had anticipated, I detected a rough granular condition of its lining membrane; the lip of the uterus was then seized with a vulsellum and drawn down, and a wire armed with a roll of cotton, thoroughly saturated with the fuming nitric acid, was passed up to the fundus and retained there for some seconds; this was done twice, so as to secure a thorough cauterization of the whole interior of the uterus. No pain followed. I kept this lady in bed for some days as a precaution, but no other treatment was adopted. The next period came on a little before its time, and was profuse, but attended with

less pain. Since then her condition has steadily improved; the periods now last but three or four days, and are almost painless. This lady had been treated in various ways, without benefit, before she came under my care. I may here remark, that if nitric acid be applied shortly before a menstrual period, that period is likely to be profuse; but this by no means indicates that the treatment is a failure, the subsequent ones, as in the present instance, frequently becoming normal.

To guard against misapprehension, I think it right to add that, in advocating the method of treating endometritis, practiced in this case, I must be understood to refer only to cases in which menorrhagia, purulent discharges, or profuse uterine catarrh exist, or to cases in which other means have, on a full and fair trial, failed to effect a cure.

This case occurred before I commenced to use my platinum canula.* I now but seldom find it necessary to dilate the cervix in cases of endometritis, but apply the acid through the canula; a method which saves the patient much suffering, and, if carefully carried out, is very efficacious.

Whenever endometritis exists for any considerable length of time the mucous membrane lining the cavity of the uterus is thickened, and likely to become covered with numerous elevations, sometimes minute, sometimes so large as to be distinctly felt by the finger introduced through the cervix. It is generally necessary to remove these with the curette, and subsequently to apply nitric acid.

The occurrence of this condition, I have already dwelt on, when speaking of menorrhagia, to which it nearly invariably gives origin. We have recently had in our wards, a well-marked example of this, the particulars of which I have detailed in a former lecture (Lecture V). The patient suffered

* See Lecture XVII.

from such irritability of the bladder, that for years past she had been obliged, even during the night, to micturate at least every hour. This was her most distressing symptom, but of even more importance was the menorrhagia, which had gone on increasing in severity for ten years, and had rendered her perfectly exsanguine. In this case, I dilated the cervix, passed my finger up to the fundus, and found the lining membrane of the cavity to be in a roughened, granular condition. I cauterized the interior of the uterus freely with the strong nitric acid, and had the satisfaction of seeing her completely relieved from the vesical irritation, and of discharging her, after the lapse of a few weeks, perfectly cured, also of the menorrhagia from which she had so long suffered.

But, as already mentioned, you frequently have endometritis associated with endocervicitis, and, as the latter is the most obvious, all the symptoms may possibly be referred to it, and the existence of the former overlooked. Consequently you may be surprised to find, when you have cured the cervical affection, that the patient's sufferings are not alleviated. Dr. Marion Sims points out this, in his work on *Uterine Surgery*, and I am able to confirm the accuracy of his observations.

Endometritis occurring in virgins, or in women who have never been pregnant, runs a very different course. In the great majority of cases, these will seek medical aid, either for the cure of sterility, or, more generally, with the view of procuring relief from the sufferings which they experience at each menstrual period. I will first trace a case as it occurs in a married woman. She, on being questioned, will, as a rule, tell you that prior to marriage, menstruation had been normal, or, at least attended with but little suffering; that after marriage, the function gradually became more painful, and that this increased in intensity till she was compelled to seek relief.

On making a vaginal examination, we will find the cervix uteri to be elongated, probably swollen, and congested, frequently too, indeed I think in the majority of cases, ante flexion of the fundus will be found to exist, occasionally it is retro-flected, the os uteri is small and annular, and frequently we will be able to see a clear and slightly viscid discharge to exude from it.

Now the pathology and causation of these cases is, I think, this: they always occur in women in whom either the cervical canal is contracted, and the cervix conical, or in whom congenital ante flexion of the uterus exists; the canal, narrow though it be, sufficed before marriage, to permit without difficulty, the exit of the menstrual discharge, but under the influence of the excitement caused by sexual intercourse, a greater quantity of blood flows towards the uterus and ovaries; the mucous membrane lining the cavity and cervix becomes unduly swollen and vascular, and as a result, an increased amount of blood is, at the menstrual period, poured out into the cavity of the uterus; the swollen condition of the mucous membrane at the os internum and in the cervical canal, renders the originally narrow passage almost impermeable, the menstrual flow is retarded, and, as a result, the blood coagulates in the distended cavity, and thus becomes virtually a foreign body. It excites the uterus to contract, and after much suffering, it is expelled; relief then for a time is obtained, but the same process recurs over and over again, and in time permanent irritation of the intra-uterine mucous membrane is excited. And now the patient's sufferings are not confined to the menstrual period alone, for, in consequence of the unhealthy condition of the intra-uterine mucous membrane, its secretion is increased in quantity and altered in character; it becomes viscid, and exudes slowly from the uterus. Often its exit is impeded to such a degree that it distends the cavity, inducing permanent dilatation, and

often hypertrophy of the whole organ, aggravating the previously existing irritation of the lining membrane, and causing great distress and pain to the patient.

If these cases are neglected, the whole system suffers; the ovaries are specially liable to be implicated; the irritation set up in the uterus, seems to be propagated to them; they become enlarged, painful to the touch, and the source of great suffering; the bladder often sympathizes, and the patient suffers from irritability of that viscus; then reflex irritations manifest themselves; the breasts become painful, the appetite fails, and often there is nausea and even vomiting; in a word, chronic endometritis in a nulliparous woman is a most serious affection, causing the greatest sufferings, and undermining health, not rapidly, indeed, but surely, while sterility is an invariable result.

Unfortunately, too, it is a most obstinate affection. If the case be of old standing, the hope of doing much for the patient is but small; if, however, it has not gone on too long, the prospect of effecting a cure is good, but to do this, it is essential to bear in mind the pathology of the disease, the basis of which is, that the conical cervix and contracted canal, coupled with anteflexion, when this exists, prevents the menstrual discharges and viscid secretions of the diseased lining membrane from obtaining easy exit. The first step, then, towards effecting a cure, is to insure the free escape of the contents of the uterus.

There is but one means of effecting this: the cervix must be divided. I lay this down as a rule from which there are few exceptions, that it is almost impossible to cure chronic endometritis in the nulliparous female, when the cervix is conical, and its canal contracted, unless the cervix be divided, and this I believe to be absolutely true when the affection coexists with either anteflexion or retroflexion. I have tried

every other possible method, including the free use of nitric acid, after dilatation of the cervical canal, to find my patient after the lapse of a few months in no way improved. The following affords a striking example of this. It is interesting, too, from the fact of its being the first case in which I divided the cervix for the cure of endometritis, my previous operations having always been for the relief of painful menstruation.

Mrs. —, aged 36, married ten years, came under my care four years ago. She stated that previous to marriage she had always enjoyed good health, but that some months subsequently she suffered from a severe attack of pain in the region of the uterus. This after a time subsided, but from that date she never was perfectly free from suffering, till of late, though naturally of very active habits, she had been compelled to give up taking exercise nearly altogether; for years, too, she had been off and on under medical treatment, without ever obtaining permanent benefit.

She suffered from constant headaches; these occasionally were very severe, from indigestion, flatulence, and constipation. She was unable to walk, for on attempting to do so she was always seized with pain, referred to a point corresponding to the fundus of the uterus. This pain lasted for some time, then she would obtain relief, and immediately after invariably perceived a copious viscid discharge to exude from the vagina. These attacks of pain and subsequent leucorrhœal discharge occurred even when she kept quiet, though then the intervals between them were considerable. Walking, however, always brought them on. I subsequently satisfied myself that these attacks of pain were due to the efforts of the uterus to expel the copious secretion which collected in it.

On making a vaginal examination I found that the cervix was conical, and the os so small that I could not introduce an

ordinary sound, but had to use a fine probe; the fundus was large and heavy, and slightly painful to the touch; there was no abrasion; but, though pressure with the fingers on the fundus caused but little pain, sexual intercourse was always productive of suffering.

I decided on treating this case by applying nitric acid to the fundus, but as this was impossible in the contracted state of the cervical canal, I introduced a length of No. 3 sea-tangle bougie into the uterus, and after the lapse of twenty-four hours was, on withdrawing it, enabled to introduce a platinum canula, and through it apply the fuming nitric acid. The result was for the time very satisfactory. She improved wonderfully, and lost most of her distressing symptoms, and I saw no more of her for four months, when she again consulted me, saying that she was as bad as ever, and on making a vaginal examination, I found that she had relapsed into her former condition; the os uteri was as small, and the catarrh as copious as ever. On considering this case, I became convinced that till I gave free exit to the pent-up viscid discharge no permanent benefit would follow, and, believing that division of the cervix would alone effect this, proposed the operation to her. She at once agreed to submit to it, and I accordingly performed it, dividing the cervix bi-laterally, in the manner described in a previous lecture. The result has been most satisfactory. She recovered without any drawback; has ever since steadily improved, and now, after the lapse of several years, is quite free from suffering, is able to take long walks, and leads a most active life.

After the divided surfaces have healed, and that no danger of exciting inflammation exists, it is generally necessary to apply carbolic acid, or some other caustic, up to the fundus; in fact, I always keep the patient under observation for some weeks subsequent to the operation. The length of time during which it is necessary to continue intra-uterine medication

subsequently, must depend on the previous duration of the disease, as well as on the severity of the symptoms. In the case just related I applied carbolic acid several times to the fundus, subsequent to the operation.

In this case the patient has remained sterile; indeed, I had no hope that conception would follow in her on the cure of the endometritis, the disease was of too long standing. As a rule, I object to perform the operation of dividing the cervix, simply with the view of removing sterility; conception doubtless sometimes does occur after the operation, not because the cervix is rendered patulous, but because the membrane lining the interior of the uterus being rendered healthy, conception becomes possible. The following case is an example of this:

Mrs. K——, aged 26. Had resided in India ever since her marriage, five years ago; never has become pregnant. Menstruation was normal, and nearly painless. She suffers, however, constantly from backache, and much discomfort in the left ovarian region; is quite unable to take exercise, as walking brings on pain. She was specially anxious to have a family, and returned from India, and sought advice, more with the view of having sterility removed, than for the relief of her sufferings. On examining her I found the cervix to be conical and the fundus acutely anteфлекted; there was also a good deal of uterine catarrh. The probe passed to the depth of nearly three inches. As this case was by no means a severe one, and evidently not of long standing, I decided on endeavoring to avoid dividing the cervix, and accordingly introduced an anteversion pessary, punctured the cervix, applied carbolic acid to the fundus, gave bromide of potassium in full dose, and found the patient's condition steadily to improve. All her symptoms subsided; the flexion, however, remained unaltered. After a time I sent her to Ems, where she remained for some weeks, and returned in a very satisfactory state. Her husband, who,

during this time, had remained in India, now joined her, and they travelled about for a couple of months. On returning to Dublin, just a month before they were to start for India, she called on me, and said she had again of late begun to suffer as much as ever, and on examining her I found her to be in exactly the same condition as when I had first seen her five months before.

I at once told her that all she had done had been useless, and that there was no chance of a cure except she submitted to have the cervix divided. She readily consented. I divided the posterior wall of the cervix only, this being the operation I always perform in cases of ante flexion. She sailed for India in four weeks from the date of the operation, soon after became pregnant, went to the full term of utero-gestation, and gave birth to a healthy child.

I have given these two cases in detail because they show how useless any attempt to cure endometritis in sterile women is, unless as a preliminary step, free exit is afforded to the discharge, which invariably collects to a greater or less extent in the cavity of the uterus. And if I have succeeded in impressing this fact on your minds, your failures in your future practice will be lessened very considerably.

The course and symptoms of endometritis in virgins do not vary in any great degree from those in the nulliparous married woman, the most prominent and perhaps the commonest symptom being dysmenorrhœa, the discharge in many instances becoming scanty; in a few the menstrual function is normal, but these are the exceptions, while the general health suffers even more than in the latter class; and, should the patient unfortunately marry, her sufferings are intensified. The cause of the attack is often obscure; it may be the result of over fatigue, but in the majority of cases I believe cold to be the exciting cause.

I know of no affection so difficult to treat efficiently as chronic endometritis occurring in a virgin, and to make matters worse, it is generally met with in girls of weakly, often of a strumous constitution. Occasionally it will yield to the application of carbolic acid to the fundus, coupled with warm hip-baths, local depletion, and attention to the general health; but in by far the greater number of cases it will prove to be associated with a conical cervix, and probably an antelected uterus, and if this be so, the only hope of cure, in my opinion, rests on the performance of the operation of dividing the cervix, and the subsequent treatment of the unhealthy mucous membrane by the application of carbolic acid, or some similar agent.

I have hitherto spoken only of disease of the mucous membrane lining the cavity of the uterus; but the parenchyma also is frequently the seat of disease, being specially liable to congestion, which often terminates in permanent hypertrophy and enlargement of the whole organ. To this condition the term *chronic metritis* is generally applied. I agree, however, with Dr. T. Gaillard Thomas, that "diffuse interstitial hypertrophy" conveys a more correct idea of the pathology of the affection I am now speaking of, consisting as it does in an increased flow of blood to the part and subsequent static congestion, with increased growth both of the connective tissue and of the muscular fibres of the uterus, that of the former being greatly in excess.

Chronic metritis as thus defined is a very common affection. It is met coexisting with, often apparently the result of endometritis; the inflammation at first confined to the mucous membrane gradually extending to the substance of the uterus, the bloodvessels of which become engorged, while the muscular structure is softened, swollen, and, in my opinion, frequently infiltrated with serum to such an extent as to produce well-

marked œdema of the organ, especially of the cervix. In fact, I have satisfied myself that the great size which the uterus attains in many cases is due mainly to the serous effusion which has taken place into its muscular tissue. In addition to those cases in which metritis appears to be due to an extension of disease from the intra-uterine mucous membrane, we have it without doubt depending on the irritation caused by the development and growth of uterine fibroids. In two cases which occurred in my own practice, I was called upon to treat a very intractable form of metritis. Both patients were for a long time under observation, and in both intramural fibroids were finally proved to exist. Both patients were unmarried. In other cases the affection seems to be of comparatively passive origin, often the result of imperfect involution of the uterus subsequent to delivery, which, favoring or actually causing permanent fulness of the bloodvessels, is the first step in a process which ends in the structural changes already described.

On whatever cause depending for its primary origin, metritis when once developed is a very distressing affection, and one most difficult of cure. That form which is connected with the growth of a fibroid may be dismissed with a few words. Small intramural fibroids are most difficult to detect, their very existence may not even be suspected; time alone unravels the mystery when the tumor has attained a size which enables it to be recognized; but in metritis due to other causes, much may be done to alleviate the patient's sufferings.

Where endometritis exists it is obviously necessary that every effort should be made to restore the mucous membrane to a healthy condition; till this is done no progress will be made towards the cure of the other affection. In these cases intra-uterine medication must be used with great caution, for under such conditions the application of nitric acid or other strong caustic to the interior of the womb may be followed by

injurious results. It is here that local depletion by leeching or puncturing the cervix is eminently beneficial, especially so in those cases where oedema exists. Blisters applied above the pubes or to the sacrum are also of great use, while where induration exists, repeated applications of the actual cautery promise the best results. Postural treatment, that is enjoining absolute rest, the shoulders being on a level with the pelvis, is an important element in the successful treatment of some of these cases, but is a method very difficult to carry out.

Vaginal douches of hot water, if properly carried out, are capable of affording great relief, often of actually facilitating a cure; they should be administered* at a temperature of about 105° , and be continued for a considerable time twice daily. Counter-irritation, kept up by the application of a succession of small blisters above the pubes, is often productive of marked relief, but to be of use they have to be repeated frequently, and it is often difficult to induce patients to persevere with them; you may therefore be obliged to substitute for them the daily application of iodine. But in truth chronic metritis often proves a most intractable affection; its tendency is to terminate in hypertrophy and induration of the whole, or at least of the body of the uterus. When this stage is reached, benefit frequently follows from a visit to Ems or Kreuznach; but the stay at either place should, to be of use, be a prolonged one.

* See Lecture XVII.

LECTURE XI.

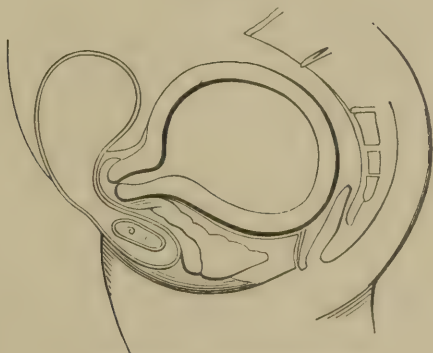
DISPLACEMENTS OF THE UTERUS—RETROFLEXION—CAUSES, SYMPTOMS,
AND TREATMENT OF—HODGE'S PESSARY—RETROVERSION—ANTE-
FLEXION—PROLAPSUS UTERI.

THE healthy, unimpregnated uterus is an organ of great mobility. Its connection with the pelvic walls by means of the broad ligaments, which are merely folds of the peritoneum, is so very lax, that it can without difficulty be inclined either anteriorly or posteriorly; they no doubt oppose a certain amount of resistance to its lateral motions, but very little to its movements in other directions, while the round ligaments, which do materially aid in supporting it, frequently prove to be incapable of offering any effectual opposition to the descent much less to inclinations of the womb in either an anterior or posterior direction. In young women who have not borne children, the muscular structure of the vagina, forming, as it does, a firm tube into which the cervix uteri is inserted, aids materially in supporting the womb; but in women in whom that canal becomes relaxed from the effects of frequent parturition, or of disease, local or constitutional, the support afforded by it is in a great measure wanting, and the organ may sink directly down; the tendency to such a displacement becomes greatly aggravated, should the womb, as is frequently the case, be from any cause enlarged and heavy. But common as descent of the uterus is, the other displacements to which the organ is liable are still more so. Hardly a day passes in which we do not meet with examples among the extern patients of

flexions of the womb either backwards or forwards. I shall call your attention to these first, and afterwards return to the consideration of prolapse.

The womb, then, may be bent on itself either in a posterior or anterior direction, and to these flexions the terms "retroflexion" and "anteflexion" are respectively applied. Now it is of importance that you should clearly understand what is meant by these terms. Some writers, and among them the late Sir J. Simpson, used the words "retroversion" and "retroflexion" as synonymous, but in reality they indicate two very

FIG. 25.



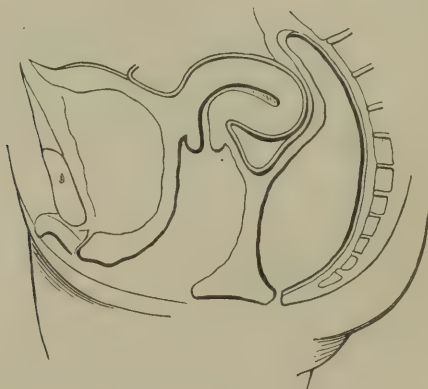
Retroversion of the Gravid Uterus.

different affections, for retroversion signifies a turning back of the entire uterus, and is applicable to that change of position to which the gravid womb is liable when the fundus lies in the sacral hollow, the os being forced up behind the pubes, a condition rarely seen unconnected with pregnancy; whereas by retroflexion, on the other hand, is to be understood a bending back of the fundus alone, the os remaining very nearly in its

natural position; while in cases of anteflexion, the fundus is in like manner bent forwards.

Retroflexion, which is perhaps the most common displacement to which the uterus is liable, may be met with at nearly

FIG. 26.



Retroflexion of the Uterus.

every period of life from puberty onwards. It is, however, rare in youth and in advanced age, the great majority of cases occurring during that period of life in which the uterine system is in the state of its greatest activity, namely, between the ages of twenty and forty years. It is besides an affection, the existence of which is very liable to be overlooked; this being due rather to the fact that the symptoms to which it gives rise have often but little apparent reference to the uterus, than to any difficulty in detecting it when once our suspicions are aroused.

When we consider the position of the uterus in the pelvis with the bladder, an organ capable of such immense disten-

sion, placed in its immediate front and frequently exercising a pressure backwards, and when we remember that many women from mere habit, or from motives of delicacy, oftentimes pass many hours without emptying that viscus, we can readily understand the frequent occurrence of this displacement. But though the distended bladder may thus be the agent in directing the uterus backwards, it is but a secondary cause; the uterus itself must be at the time in an abnormal condition, for otherwise it would regain its proper position whenever the bladder became flaccid. Retroflexion is generally, in my opinion, produced gradually, and is the result of affections which increase the bulk and weight of the uterus, and more especially of its fundus. It is not, however, necessary that the increase should be confined to the fundus, though, if that be the case, the danger of retroflexion occurring is much increased; for if the bulk of the entire uterus be augmented this may still take place, because not only is there a force acting from before, directing the fundus downwards and backwards, but also because there is no resistance from behind to counteract that tendency. The muscular tissue of the uterus is in all these cases in a relaxed condition. Were this not so, I do not believe that the uterus could bend.

We, however, frequently meet with cases in which, while retroflexion obviously exists, the uterus certainly is not enlarged or increased in weight; but this is capable of explanation if we bear in mind that, when the uterus is bent on itself at an angle, the circulation must be seriously interfered with. Congestion doubtless at first occurs, but subsequently, if the case be neglected, atrophy of the organ may after a long interval result. In time the original cause of the affection may cease to exist; but the uterus does not necessarily on that account regain its normal position, for not only may the fundus be bound down by adhesions formed on its peritoneal surface, but also a pro-

cess of absorption and consequent thinning, may take place at the point of flexion, especially on the lower or concave surface, so that even when no adhesions exists, permanent restoration of the uterus to its normal position is impossible; this fact enables us to understand the unsatisfactory results which often follow treatment adopted for the cure of cases of old standing. Without doubt, too, the affections may in a few cases be congenital.

The causes producing the condition likely to result in retroflexion may be reduced to three classes, namely:

1st. Congestion, frequently terminating in chronic inflammation of the uterus, and hypertrophy of that organ.

2d. Subinvolution of the uterus, after labor or abortion.

3d. Tumors of the uterus.

But in addition to those cases, in which we can trace the flexion to the existence of one of the conditions here enumerated, we occasionally meet with others, the origin of which is so obscure, as to prevent our being able to decide as to the mode of their occurrence.

Congestion of the uterus is a common cause of retroflexion, and one frequently overlooked. It is met with in two very different classes of females, namely, those who lead a very active life; and again, in those of weakly constitution and sedentary habits, such as needlewomen and teachers. Thus young women of active habits, who from necessity or for pleasure, walk, ride, or garden much, or who follow employments or amusements necessitating much standing, will sometimes continue to pursue these duties or amusements during the catamenial periods; the result is that the organ remains congested for an undue length of time, and a condition favorable to chronic inflammation is produced.

The following case illustrates this form of the disease:

M. F., æt. twenty-five, unmarried, has always lived a very

active life, and, till within a comparatively recent period, enjoyed excellent health. About three years ago having been compelled to undertake the superintendence of a large farm, she underwent great fatigue, generally spending from eight to twelve hours each day in the open air, either on foot or on horseback, and never relaxing her exertions even during her menstrual periods. At first she suffered from a sense of fullness and weight in the lower part of the abdomen, but to these symptoms she paid no attention. At about the end of a year she perceived, for the first time, a new train of symptoms. She now experienced difficulty in passing water, and was obliged to strain in doing so. After a little time her sufferings were further increased by difficulty experienced in defecation. The bowels were not actually constipated but their action caused great pain, and the fæces when passed were as small as those of a little child. The catamenia appeared regularly but in diminished quantities. I felt in this case, as I always do when the patient is unmarried, great reluctance to make a vaginal examination, but her sufferings were so great, and treatment directed to other organs had so entirely failed to afford relief, that I deemed it absolutely necessary to ascertain the condition of the uterus, and on examining I discovered that organ to be much enlarged, tender to the touch, and completely retroflected, its fundus occupying the hollow of the sacrum, and pressing against the rectum; this explained one of her symptoms, namely, the difficulty experienced in defecation, the irritation of the bladder being evidently reflex. With the view of retaining the uterus in its normal position, I introduced a Hodge's pessary. The fundus was raised without difficulty, but the pessary first used proved to be too large, and caused so much pain that, after the lapse of a few hours, it had to be removed. On a subsequent day, however, I introduced a smaller one. This answered admirably, and she experienced such relief that

she was able to return home, and has since followed her ordinary occupations. In this case the retroflected uterus was in a state of chronic inflammation, and to this condition her greatest sufferings were due. In the following case, however, no inflammation was present. The uterus was simply congested, and a very different train of symptoms manifested themselves.

A schoolmistress, æt. twenty-one, had suffered for more than a year from occasional attacks of vomiting, which for the last three months had become incessant. She had been treated in various ways, but without benefit, and at the time I saw her in consultation with my colleague, Dr. Little, under whose care she had been, rejected everything she swallowed. She even vomited lime-water and milk, and this though only one spoonful had been given at a time and at regular intervals, no other food of any kind being allowed. In like manner she had been fed on beef tea exclusively, a spoonful only being given at intervals of fifteen minutes. The food thus taken would be retained for a time, till some ounces had been swallowed, then the whole would be rejected. Nevertheless she had not become actually emaciated, and she only complained of debility, and pain in the pit of the stomach and in the back. The catamenia appeared at regular intervals, but in much smaller quantities than formerly. On examining the abdomen, tenderness on pressure was detected over the left ovary, and to that spot four leeches were applied. The effect was marked. The same afternoon the stomach retained some beef tea, that being the first food retained for several weeks. The vomiting, however, did not entirely cease, but still occurred once or twice a day, nearly always in the morning. Being now satisfied that this symptom depended on some reflex irritation, we decided on making a vaginal examination, and I was somewhat surprised to find the uterus completely retroflected. The fundus was enlarged and occupied the hollow of the sacrum. It was easily

raised to its normal position, and to retain it there, I introduced a Hodge's pessary of small size. This was, from the very first, borne without inconvenience, and from the time it was introduced the vomiting entirely ceased. The catamenia subsequently appeared in much larger quantities. I removed the pessary after it had been worn for three months. Since then there has been no return of her distressing symptoms, and I understand that she is now married.

Both these patients were unmarried women, in both congestion of the uterus occurred, which in one had reached, in the other was slowly assuming the form of chronic inflammation; when this happens the patient's sufferings are always greatly aggravated. She will tell you that, in addition to pain in the back, she suffers from severe lancinating pains over the pubes, in the groin, and shooting down along the course of the crural nerve. Change of posture, or any motion, aggravates this pain, which sometimes becomes so severe as to render walking a matter of great difficulty.

Dr. Graily Hewitt has recently described this condition, and applied to it the term of "uterine lameness." Often too in these cases, the bladder sympathizes, and a constant desire to micturate wears out the patient; touching the fundus of the uterus causes pain sometimes of a very severe character. Sexual intercourse, therefore, becomes so painful and distressing as to be actually impossible. It is this form of the affection which most imperatively calls for our interference, for it gives rise to great distress, and often lays the seeds of unhappiness in married life.

The following case exemplifies the distress which exists in cases of retroflexion when aggravated by the occurrence of chronic inflammation of the uterus. S. B., æt. twenty-eight, had been married for eight years. Not long after marriage, when in the fourth month of pregnancy, she fell downstairs

and was much hurt. As the result of this accident she aborted. For a year following she continued in a miserable state, the pain in her back and in the region of the uterus being so severe that she was seldom able to leave her bed. The catamenia were scanty and irregular. She was at length induced to go to Edinburgh, and place herself under the care of the late Sir J. Simpson. He incised the cervix uteri, and introduced a stem pessary. Severe inflammation followed and the instrument had to be removed. From this attack she recovered, and returned home feeling somewhat better, but soon relapsed into a condition even worse than before. She now experienced a distressing feeling of weight in the neighborhood of the rectum; this was greatly increased at each menstrual period, which, however, recurred regularly, the discharge being very scanty and its appearance always ushered in by severe pain. At length she became a confirmed invalid. Walking caused such suffering that she dared not attempt even to cross the room.

On examining her I found the uterus was completely retroflected, the fundus, which occupied the hollow of the sacrum, being very tender to the touch. The os was gaping, freely admitting the tip of the finger, and a copious discharge of semi-purulent fluid exuded from it. I leeched the cervix on three occasions, and when the tenderness of fundus was lessened, introduced one of Hodge's pessaries, which she wore without inconvenience. Her condition has since steadily improved. Menstruation now lasts for two or three days, and she is able to perform her usual household duties. She still continues to wear the pessary. In this case as well as in the foregoing one, menstruation though not entirely suppressed had become very scanty. The reverse will be found to be nearly invariably present when the flexion depends on other causes.

You doubtless remember my having pointed out the fact, that not unfrequently after labor or abortion, the uterus from

various causes fails to regain its natural size, and remains unduly enlarged ; to this condition the term "subinvolution" is applied. When this is the case the organ is peculiarly liable to flexions, for not only is its fundus unduly heavy, but the muscular fibres also are relaxed, consequently the natural rigidity of the organ is in a great degree wanting. When retroflexion occurs as a sequence of subinvolution, it gives rise to very grave symptoms, the most prominent of which is menorrhagia. Indeed it is frequently for the relief of this that we are consulted.

We have recently had in our wards a good example of this form of the affection. The patient was admitted suffering from menorrhagia ; she stated that three months after the date of her last confinement, menstruation came on very profusely and lasted for six weeks, and that at each subsequent period the loss had been considerable. On examination the uterus was found to be retroflected, the whole organ being also enlarged ; but it was *not tender* to the touch, nor was sexual intercourse painful, and the introduction of the uterine sound caused no distress. You see at once how strongly this case contrasts with the ones previously detailed. Here is another, the particulars of which I have recorded in my note-book. A lady gave birth after a difficult labor to a still-born child, about five months previous to my seeing her. Considerable hæmorrhage followed delivery, and her convalescence had been very slow. Subsequently she suffered from profuse menstruation, had gone to the seaside and been treated by the administration of tonics, but without effect. On examining her, I found the uterus completely retroflected and much enlarged. The case was clearly one of subinvolution of the uterus and subsequent retroflexion. This lady did not suffer any pain. She complained of the debility consequent on the menorrhagia and of nothing else.

There is no doubt but that the presence of a tumor im-

bedded in the wall, or contained within the cavity of the uterus, may predispose to its flexion; or again, by bulging out one wall it may simulate a flexion, although in point of fact the axis of the uterus remains unchanged. This was so in the patient whose case is illustrated by the woodcut, Fig. 13, page 102. The uterus in her case appeared to be anteflexed, but in reality the anterior wall had merely yielded to the pressure exerted by the polypus as it increased in size. In like manner fibrous tumors, if situated on the peritoneal surface, may possibly, by their weight, draw the fundus of the uterus downwards. Care therefore is needed to discriminate between a retro- or anteflexed uterus and an intramural or intra-uterine tumor bulging the wall outwards, or an extra-uterine fibroid projecting from its surface. It is only by means of the uterine sound that you can clear up this point.

From the details of the cases to which I have called your attention, you will see that the symptoms they presented varied much; still, as I shall presently notice, they had some well-marked points, common at least to all the cases falling under one of the heads into which I have divided them.

If you refer to most of the works on diseases of women, you will find the symptoms of retroflexion of the uterus stated to be a "sense of weight" in the pelvis, "pain in the back," or "shooting down the thighs," etc.; symptoms which are common to nearly every form of uterine disease, and, therefore, worthless as a diagnostic mark; while with respect to the state of the menstrual function, no attempt is made to apply to it any definite rule. Thus Sir J. Simpson, in the first volume of his *Obstetric Works*, says that he has found the "catamenial discharge to be the most oppositely affected, occasionally in the way of menorrhagia, sometimes of dysmenorrhœa." Again, Dr. Churchill says, "Menstruation may be profuse or painful, or both." I cannot but think that this apparent contradiction

in the description of symptoms, is due mainly to the want of careful discrimination between two classes of cases, depending on totally different conditions of the same organ.

Doubtless there is not any one symptom on which we can rely as indicating the existence of retroflexion of the uterus; and I do not remember in my own practice a single case in which, prior to making a vaginal examination, I had sufficient grounds for concluding that this displacement existed, though I often surmised, and as a subsequent examination proved, correctly, that such was the case. Thus, in the first of the cases which I have detailed, the most prominent symptoms were irritation of the bladder and difficulty in defecation; in the fourth, they were pains over the ovary and total inability to walk; while in the second regurgitant vomiting alone was complained of. Another case presented an example of uterine lameness, and in her the uterus was so tender to the touch, that sexual intercourse was impossible. In these cases, however, differing as they do in other respects, the menstrual function was similarly affected, being in all much diminished in quantity. In two other cases, on the contrary, menorrhagia was the sole symptom which attracted the patient's attention. And, again, in a case recently under observation, although menstruation was profuse and weakening, the prominent symptom was paroxysms of intense pain. But though the result produced—namely, retroflexion—was in all these cases the same, the causes giving rise to that result was different. Thus, in those in which menstruation was diminished, the retroflexion was the result of congestion, terminating in chronic inflammation and slowly produced hypertrophy. In the others, where menorrhagia existed, it followed on subinvolution, the catamenial discharge being diminished or increased according as the flexion depended on one or other of the causes named.

I have already noticed the occurrence of vomiting as having

been the prominent symptom in one case. This of course was due to reflex irritation; but the stomach is not the only organ liable to sympathize with the uterus when it is retroflected; the *mammæ* may also be affected. Thus, I recently was consulted by a married lady, mainly for the purpose of deciding whether she was pregnant or not. She stated that four years previously she had given birth to a living child, and that subsequently she had been several times pregnant, but on each occasion had miscarried at the end of the third month. She supposed that she was now again pregnant, because she suffered from incessant nausea, while at the same time her breasts had become enlarged, painful, and distended with milk; but still she was in doubt, because the *catamenia* appeared not only regularly, but in increased quantity. I speedily satisfied myself that she was not pregnant. The uterus was retroflected. It was manifestly a case of subinvolution terminating in retroflexion. In this case a pessary was at first badly borne, though finally one was introduced which answered admirably.

From the consideration of the foregoing cases, I think we may fairly draw the following conclusions:

1st. That retroflexion of the uterus is a common affection, and that it is met with both in married and unmarried females.

2d. That it is generally a secondary, not a primary affection.

3d. That when it is due to congestion, or chronic inflammation of the uterus, terminating in hypertrophy, the *catamenia* are diminished in quantity and frequently painful.

4th. But that when retroflexion is the result of subinvolution of the uterus following labor or abortion, the *catamenial* discharge is, at least in the first instance, increased in quantity, sometimes even to an alarming degree.

5th. That in addition to the symptoms common to all forms of uterine disease, namely, pain in the back, sense of weight, etc., we not unfrequently have, where the uterus is retroflected,

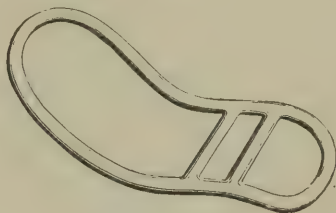
difficulty in defecation, and in some cases reflex irritation of the bladder, stomach, and breasts, occurring now in the order of frequency given.

It is seldom that much difficulty is experienced in recognizing a retroflected uterus; you feel a tumor in the recto-vaginal *cul-de-sac*, which you can in most cases raise by making pressure on it with the finger; and in doing so you can generally satisfy yourself that it is the fundus of the uterus, the cervix of which lies in its natural position; but the use of the sound will decide the question; for, if the uterus be retroflected, the instrument will pass with its concavity towards the sacrum; and when introduced you can in most cases, by giving the handle of the instrument a half turn, raise the retroflected fundus to its normal position, thereby causing the tumor to disappear. It will, however, drop back as soon as the sound is withdrawn, unless it be supported by means of a pessary.

Great difference of opinion exists among practitioners as to the best mode of treating cases of retroflexion. Dr. Meadows would endeavor to cure the inflammatory condition, which is the chief cause of the patient's sufferings, before having recourse to mechanical treatment. I think, however, that where a pessary can be borne, the restoration of the organ to, and the supporting of it in, its proper position, will materially aid us in our efforts to effect a cure. The instrument that I generally use for the purpose of supporting the retroflected womb, is the modification of the ring pessary, known as Hodge's lever pessary; it is oblong in shape, and has a double curve (Fig. 27). When introduced it should lie in the position shown in the engraving (Fig. 28). Those made of vulcanized india-rubber, on which the secretions of the vagina take no effect, are the best instruments. I prefer them with transverse bars; the cervix projects through the space behind the posterior one of these. Dr. Greenhalgh has suggested a useful modification

in the construction of these little instruments; he has them made of copper wire cased in india-rubber tubing, the wire,

FIG. 27.



Hodge's Pessary.*

however, is wanting at the lower or wide end, the india-rubber alone extending across that part. This is a double advantage,

FIG. 28.



Hodge's Pessary in Situ.

* These pessaries as generally sold, and as figured in the woodcut, are not sufficiently curved in their upper third, and their value as a lever is consequently materially lessened.

the yielding band of india-rubber adapts itself to the parts, and never, by its pressure, irritates the neck of the bladder, which the rigid instruments sometimes do, and moreover it permits the sides of the pessary to be approximated during its introduction, a matter of no small importance in many cases where the orifice of the vagina is narrow, while the elasticity of the wire expands the pessary to its original width as soon as it is fairly within the vagina. I have repeatedly seen these "spring pessaries" worn with comfort by patients who could not tolerate the rigid ones. Instead of transverse bars Dr. Greenhalgh's have bands of india-rubber running across them. He recommends that in the treatment of those troublesome cases in which prolapse of the anterior wall of the vagina exists, large-sized pessaries be worn, in which these transverse bands extend down the entire length of the instrument, as is shown in the annexed engraving (Fig. 29). I do not, however, approve of

FIG. 29.



Greenhalgh's Spring Pessaries.

these bands, for I find that after a short time they stretch and yield, and, moreover, becoming coated with mucus, often cause a very disagreeable discharge.

Whatever instrument you select, care must always be taken to see that it be of suitable size and length: for if one be introduced which is too long, it will cause much discomfort, and

perhaps actual pain ; while, if the instrument be too small it will slip out ; you must, therefore, have a number of these pessaries of various sizes by you, and remember, that the vagina varies greatly in size in different women.

A properly fitting pessary generally affords immediate relief to the patient, and may be left *in situ* for several weeks, or even months. I always, however, recommend patients to have it removed after the lapse of ten or twelve weeks, and not to have it replaced for a few days. By adopting this precaution, all danger of unpleasant consequences following its use will be obviated.

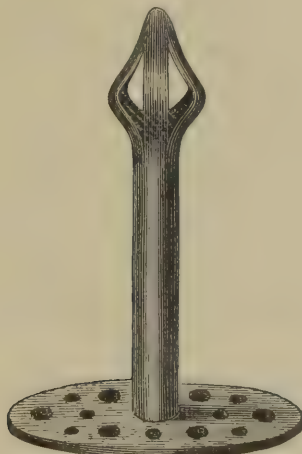
Sometimes, however, Hodge's pessary, even if properly shaped, fails to raise the retroflected fundus sufficiently, and you will from time to time meet with cases in which it becomes necessary to straighten the uterus by the introduction of a stem within its cavity. The use of stem pessaries are specially useful when dysmenorrhœa is present in connection with retroflexion.

Stems are very liable to slip out of the uterus. To obviate this tendency Dr. Chambers recommends the use of a vulcanite instrument, the stem of which is split and expands after being introduced into the uterus. This instrument is self-retaining, and when it can be borne often proves useful. Dr. Greenhalgh's flexible pessary, Fig. 30, is, however, in my opinion, superior to any other. The stem consists of india-rubber tubing, admitting an ordinary sound, which must be passed into it when the stem is being introduced. Near the upper extremity is a bulb with four slits in it, through which the secretions of the cavity escape ; the lower extremity terminates in a shield. Dr. Greenhalgh urges in its favor that "being of soft material it adapts itself better to the canal, is not liable to slip out, or to inflict injury, and can be worn without interfering with marital relations."

An ordinary vulcanite or galvanic stem pessary can in gen-

eral be retained *in-situ* by the subsequent introduction of a Hodge's pessary, or if that fail, of an ordinary box-wood disk. Stem pessaries, of whatever kind employed, should never be left in the uterus for a longer period than a month, without removal, and their use should be avoided when possible.

FIG. 30.



Greenhalgh's Flexible Stem.

Should, however, the uterus be so tender to the touch that the pessary cannot be worn without causing discomfort, you must endeavor first to relieve the tenderness by the use of the vaginal douche, or by local depletion, practiced either by puncturing the cervix or by leeching it. Indeed Dr. Hall considers repeated bloodletting, effected by puncturing the cervix, sufficient alone for the cure of flexions. This assertion is, however, too general; it is occasionally, but not generally sufficient. I use it as an adjunct; supporting the fundus by means of a pessary, and at the same time endeavoring to bring the organ

back to its normal condition by local depletion, practiced at intervals of a few days. In fine, treatment directed to remove the cause of the flexion should be carried out, while the uterus should, if possible, be retained in its normal position by mechanical means.

In conclusion, I would urge on you the necessity of bearing in mind that cases of retroflexion are frequently met with which seem to cause neither distress, nor even inconvenience, to the patient, and that such cases should not on any account be interfered with.

I must now briefly direct your attention to retroversion of the uterus: Retroversion of the uterus is not, at least in its complete form, a displacement of frequent occurrence; doubtless partial retroversion, by which is to be understood that condition in which the fundus inclines more or less backwards, the whole organ lying in a sloping direction across the pelvis, the os being still, however, its lowest point, is not very rare; but this partial version of the womb seldom gives rise to distressing symptoms, and consequently, as a rule, escapes notice. But true, complete retroversion is of infrequent occurrence. But although this displacement is comparatively rare, still it is an affection of great importance, not only from the gravity of the symptoms it gives rise to, and the serious and even fatal consequences which may result from its occurrence, but also because of the frequent errors of diagnosis made in relation to it.

In retroversion the uterus, as the name indicates, is turned completely backwards, the os uteri looking upwards and forwards, the fundus lying in the hollow of the sacrum, and sometimes almost on the perinæum.

It is of importance that you should bear in mind the difference between retroversion and retroflexion of the uterus. In the former the whole organ is, as I have explained, turned over; in the latter it is flexed, or bent at a point usually cor-

responding to the os internum. The diagrams, Figs. 25 and 26, pages 213 and 214, will convey to you a correct idea of these two very different distinct affections, which, however, are frequently spoken of as identical, or at most as differing only in degree.

Retroversion, at all times a rare affection, is still more rarely met with unconnected with pregnancy. It generally occurs about the end of the third month of pregnancy, and the first symptom it gives rise to, almost invariably, is retention of urine. You will be asked to see a woman in the third or fourth month of pregnancy, who will tell you that she is unable to pass water, and on examination you will find the bladder to be distended with urine. On emptying it, you will on a further examination find that a globular body occupies the hollow of the sacrum, and that the os uteri is high up behind the pubes, possibly altogether beyond your reach; at the same time, a bimanual examination will prove the uterus to be absent from its normal position. But possibly the patient may tell you, as in the case at present under our observation, that she is able to pass water; nay more, "that it is always coming." This is a statement which constantly misleads inexperienced practitioners; the dribbling of urine is under such circumstances but the overflow of an over-distended bladder, and if you fail to recognize this, and promptly to empty the bladder, your patient's life will be endangered, possibly lost. She may die of peritonitis, or of uræmic poisoning, or the mucous membrane of the bladder may become softened and subsequently gangrenous, and death ensue.

The causes producing retroversion of the uterus are various. Frequently the displacement appears to take place suddenly. A pregnant woman makes an effort such as that requisite to lift a heavy weight, and immediately experiences some pelvic distress. By-and-by she finds that micturition is impossible,

and on examination retroversion is found to exist. The conclusion is that the displacement took place on the moment. I doubt if this explanation is ever perfectly correct. Most probably the uterus had been, ever since, probably before the occurrence of pregnancy, lying in an abnormal position, namely, more or less across the pelvis, and that the sudden muscular effort, the bladder being at the time distended, merely completed the displacement which had previously been in gradual progress. The subsequent retention of urine is the result of two causes—one, that the posterior wall of the bladder is drawn down by the uterus, to which it is attached; the other, that the neck of the uterus presses upon the urethra, and thus obstructs the flow of urine. But in some cases the patient cannot assign any cause for the production of the distressing symptoms from which she suffers. There may have been a gradually increasing difficulty in evacuating the contents of the bladder, till finally that cannot be effected at all, or at most, but partially, only a very small quantity of urine being voided at a time. What has occurred under such circumstances may possibly be this: the patient, previous to her becoming pregnant, may have been the subject of retroflexion of the uterus; pregnancy occurring, the fundus of the uterus, as it enlarges, instead of rising, sinks gradually lower, drawing down with it the posterior wall of the bladder, the flexion in time being thus converted into a version. This, however is, I believe, of very rare occurrence. I have on the contrary, frequently known patients, the subjects of retroflexion of the uterus, to become pregnant, and have observed that as utero-gestation advanced, the fundus gradually rose, and finally assumed its normal shape and position. Dr. Barnes believes that this is effected by the gradual enlargement of the fundus upwards, there being no obstacle to its growth in that direction, and that thus, in time, the pelvic portion is partially “drawn out of its lodgment.”

Cases of retroversion of the gravid uterus usually terminate in one of three ways:

1. The uterus may be raised above the promontory of the sacrum and utero-gestation proceed normally;
2. Abortion may occur; or,
3. Death may ensue.

I shall here detail for you the particulars of the case of the patient at present in hospital, as she is likely to afford an example of the first and most favorable termination of this displacement, and it will also, I think, impress on you deeply, the importance of being able to recognize the affection, for this woman had been under treatment for some time before she came under my care, without the true nature of her case being suspected.

A. M., a married woman, and the mother of five children, was admitted into hospital, evidently suffering great pain. She stated that she had a "tumor" in the abdomen, which had existed ten or twelve days, during the whole of which period she had been in constant pain. For some time previous to the formation of this "tumor," she had, she said, experienced a good deal of discomfort, or rather distress, which was greatly increased by a constant desire to pass water, her efforts to do so being but partially successful, only a very small quantity of urine being voided at a time. Latterly, however, her condition had undergone a great change; there was now incontinence of urine, or, to use her own words, "it was constantly coming from her;" nevertheless, her sufferings were, if possible, more intense than ever. On passing the hand over the abdomen, a well-defined tumor could be felt above the pubes, pressure on which caused great pain. A vaginal examination detected another tumor lying in the hollow of the sacrum, and almost resting on the perinæum. The os uteri was absent from its normal situation, lay high up behind the pubes, and could

not be reached without the greatest difficulty. On questioning her she stated that, though a married woman, she did not think she was pregnant, but, on being pressed on this point, admitted that she had not menstruated for at least ten or twelve weeks. On proceeding to pass a catheter she objected, stating that this had been done the day before, and that she was told that there was no water in the bladder. However, being satisfied that this statement must be incorrect, I persisted, using for the purpose an ordinary No. 9 gum-elastic catheter, and drew off about two quarts of turbid, highly ammoniacal urine. The diagnosis was now clear, and a careful examination verified my previous impression that I had to deal with a case of complete retroversion of the gravid uterus. And yet this patient had been under the care of a well-informed medical man for more than a week before I saw her, but he never suspected the real nature of the case, and told me himself that she passed water regularly.

The thorough emptying of the bladder was followed by much pain, and fearing that peritonitis might supervene, I desisted for a time, after one ineffectual attempt, from any further effort at replacing the uterus in its normal position, and with the view of allaying the pain which she suffered, administered half a grain of morphia, in the form of a suppository.

After the lapse of eight hours, I found her in a comparatively satisfactory condition. She had slept, and the pain had nearly altogether subsided. The bladder was now again emptied, and the patient being placed in the ordinary obstetric posture, on her left side, I proceeded to endeavor to raise the uterus. For this purpose I introduced two fingers of the right hand into the vagina, and made steady pressure on the fundus, directing it upwards and rather to one side. Such of you as were present will remember the stress I laid on the apparently trifling point of making the pressure laterally, instead of directly upwards :

by so doing the promontory of the sacrum, which often opposes a serious obstacle to the ascent of the fundus, is avoided. In the present instance the effort I made, as described, was attended with complete success; the fundus, yielding to the steady pressure, slipped above the brim, and remained there; the patient experienced great relief, and has since progressed favorably. The catheter was, however, used regularly night and morning for some days subsequently, for though the patient could pass water, she was unable to empty the bladder, and it was very desirable that no accumulation should be permitted to occur. This precaution, namely, that the catheter be passed twice a day in all cases in which retention has continued for a considerable time should never be omitted, otherwise the bladder may not recover its tone. The subsequent history of this patient presents no point of interest; pregnancy is proceeding normally, and there is reason to suppose that she will go to her full time.

This fortunate termination is not, however, to be frequently expected; in the great majority of cases in which retroversion of the gravid uterus takes place, abortion occurs either as a direct consequence of the accident or as a result of the treatment necessary to effect reposition; therefore, be always careful to give a guarded prognosis. Thus, not long since I was urgently requested to visit a lady who, in the twelfth week of pregnancy, suddenly discovered that she was unable to pass water. I found her in great agony, having for some hours endeavored ineffectually to relieve herself. She stated that she had always enjoyed the most perfect health; that on the morning of the day on which I saw her she had been engaged superintending some domestic arrangements, during the progress of which she had assisted in raising a heavy box to a considerable height; that at the moment of making this effort she became conscious of "something giving way inside" her; but,

as at the time she did not experience any discomfort, she thought no more about it, till after the lapse of some hours, being desirous to pass water, she discovered that she was unable to do so. By-and-by her sufferings from this cause became severe, and she sent for me. I at once recognized the nature of the case, emptied the bladder, and endeavored to raise the uterus, which I found to be retroverted, above the brim, but my efforts were ineffectual. In this case I passed the catheter morning and evening, on each occasion of doing so, endeavoring by pressure on the fundus to replace the uterus in its normal position, and on the sixth attempt, that is, at the end of three days, succeeded, after which the patient seemed to go on well for a time, but after the lapse of ten days, a sharp dash of hæmorrhage occurred, and she aborted. My belief is that in this case the force necessarily exerted in replacing the fundus, and not the accident itself, was the cause of the abortion.

But abortion is not the result most to be dreaded—death may possibly follow. One fatal case occurred in my own practice. This patient was further advanced in pregnancy than either of those just alluded to, before her sufferings induced her to seek relief. It was her first pregnancy, and she was unable in any way to account for the displacement. The symptoms appeared to have developed themselves very gradually, and the difficulty of micturition to have been progressive, till finally it became impossible. As well as could be ascertained she was, when I saw her, in the sixteenth week of pregnancy; the whole of the abdomen was very tender to the touch, and the retroflected uterus nearly filled up the true pelvis; the greatest difficulty was experienced in raising the fundus. This was mainly due to the size of the uterus; but I am also of opinion that the uterus was bound down by adhesions. Abortion occurred within twenty-four hours after the reposition of the fundus had been effected, and she died in a few days. I am

of opinion that this may have been a case of congenital retroflexion, which under the influence of pregnancy, was, as previously explained, converted into one of retroversion. The adhesions were of recent origin; probably local subacute peritonitis existed previous to the raising of the fundus, and that this subsequently spread over the whole abdomen and proved rapidly fatal.

In the treatment of retroversion of the gravid uterus, two indications are plainly indicated, one being to keep the bladder empty, the other to restore the uterus to its normal position. The former should always be effected by means of a long gum-elastic catheter, for an ordinary silver female catheter will often in these cases fail to reach the bladder, so greatly is the urethra elongated and displaced. The bladder being emptied, it is generally advisable to attempt reposition at once, unless, as in the case first narrated, great pain is caused by doing so, under which circumstances it is wiser to allow some hours first to elapse, care being taken to pass the catheter at short intervals.

In the majority of cases, especially if pregnancy has not advanced beyond the twelfth or thirteenth week, steady pressure exerted by means of two fingers introduced into the vagina, will be successful in raising the fundus, care being taken to make the pressure rather to one side, so as to avoid the promontory of the sacrum. Occasionally, however, you will fail to effect reposition by this means. When this is so, you will sometimes succeed by introducing one of Dr. Barnes's india-rubber bags into the rectum,* distending it with water, while pressure is still exerted by the fingers in the vagina. If these efforts fail in raising the fundus above the brim, no resource remains but to bring on abortion. This, under the circumstances, is best effected by introducing a catheter or sound into

* This method was, I believe, first suggested by the late Dr. Halpin, of Cavan.

the uterus, and, if possible, rupturing the membranes, but sometimes in consequence of the os uteri having been forced up *behind the pubes, the introduction of a catheter or sound is impossible, and then as a last resource, an effort should be made to lessen the size of the uterus by tapping it through the rectum by means of a fine trocar or aspirator. This has been done several times successfully; the liquor amnii having been evacuated through the trocar, abortion followed, the patient subsequently recovering; but in all cases of retroversion, the tendency to abortion is great, and occasionally peritonitis supervenes. Bear in mind that in addition to abortion, the possible occurrence of peritonitis is to be dreaded, and death may ensue from this cause. Retroversion, therefore, of the gravid uterus is always to be looked on as an accident of a very serious nature.

But supposing you have succeeded in raising the fundus, the patient will still, under the most favorable circumstances, need care for a considerable time. It is essential to attend to the state of the bladder, and to pass the catheter at stated intervals, till satisfied that the organ has regained its tone, and you must watch lest the fundus of the uterus fall down again into the pelvis. To lessen the risk of this occurring, and also with a view of counteracting the tendency to abortion, you should for some time confine the patient strictly to the recumbent posture. As the uterus enlarges, the risk of a relapse lessens, and after a time becomes impossible, but the tendency to abortion for a long time continues, and in a comparatively small percentage of cases, does the patient reach the full time of pregnancy.

Before concluding my remarks on this subject, I must say a few words on the question of diagnosis. In all the cases which have come under my observation in which an error in diagnosis had been made, no sufficient examination appeared to have been

instituted; thus with respect to the patient whose case I am specially alluding to, the fact that she was suffering from retention of urine was not recognized, although the enormously distended bladder could be easily felt above the pubes. This negligence is quite inexcusable. But it is just possible that an ovarian or other tumor occupying Douglas's space might be mistaken for a retroverted uterus, even though an examination had been instituted, especially if it were large enough to press against the urethra and thus obstruct the flow of urine; but in such a case the symptoms of pregnancy will probably be wanting, and moreover, a careful examination will detect the uterus, which, under such circumstances, would probably have been forced up above the pubes, lying anterior to the tumor. Any other tumor, such as that caused by the sudden escape of blood into the recto-vaginal *cul-de-sac*, may in like manner cause some perplexity. All doubts, however, will be dispelled if on emptying the bladder, the uterus is found lying anterior to the tumor. Excusable errors, in diagnosis, then, in cases of retroversion of the gravid uterus, are possible, but with ordinary care, such should rarely, if ever occur.

But the uterus, as mentioned at the commencement of this lecture, may be displaced in other directions besides backwards; thus the fundus may be thrown forward towards the pubes. Ante flexion, as this displacement is termed, is a very common and troublesome affection, and less amenable to treatment than retroflexion.

In the great majority of instances, I believe ante flexion to be a congenital malformation. It is astonishing how frequently it is met with in sterile women, and how commonly it is associated with painful menstruation; if the patient does not seek medical advice for the cure of sterility, or to procure relief from suffering at each menstrual period, the affection may altogether escape notice. And if it gives rise to no discomfort, is best

left alone. If, however, as is so commonly the case, dysmenorrhœa be present, that must be treated on the principles recommended in a preceding lecture. I may, however, here remark that pessaries, no matter what their shape or form, though they may give temporary relief, never, in my opinion, in cases of ante flexion effect any permanent good.

Sometimes, however, ante flexion is a secondary affection, the result of congestion, chronic metritis, or subinvolution. In these cases, if congestion or inflammation be present, I puncture the cervix just as in cases of retro flexion, and this treatment alone often affords marked relief. As an example, you have the case of H. E. She is an unmarried woman, aged 30, of full habit and leucophlegmatic temperament; recently she had undergone much fatigue. She complained of severe pain, which she referred to a point immediately above the pubes, but suffered even more from a most distressing sensation, "as if," to use her own words, "something was going to fall out of her." On examining her, the uterus, which was very low in the pelvis, proved to be completely anteverted, the os lay in the hollow of the sacrum, the fundus behind the pubes. The sound penetrated to the depth of three inches. The cervix was much engorged, evidently the enlargement and subsequent displacement of the uterus was the result of congestion. I punctured the cervix, which bled freely, at intervals of a few days, administered mild saline purgatives, and enjoined rest in the recumbent posture. This patient obtained speedy relief from the distressing symptoms she experienced. Menstruation became normal, and the uterus, without my having recourse to any mechanical support, regained its normal position. But then this case was one of recent origin, and to that cause we may attribute the patient's rapid improvement, for when these affections become chronic, additional measures are necessary. The fundus should, if possible, be raised to its normal position,

and retained in it. The former is in general easily effected by means of the uterine sound; the latter is a matter of much difficulty. When it can be tolerated, I prefer for this purpose a stem pessary, made of ebony, flexible india-rubber, or aluminium. Dr. Graily Hewitt has invented a cradle pessary for the purpose of supporting the anteфлекted uterus. It sometimes proves very useful, but as often fails to act beneficially; Dr. Greenhalgh uses flexible india-rubber stem pessaries, which, being soft, do not cause much irritation, and are no impediment to connection. They are to be had from Arnold & Sons, West Smithfield, London. But in truth, anteflexion of the uterus often baffles our utmost efforts, and in a considerable proportion of cases we are able to effect but little good.

Prolapse of the uterus is another displacement of frequent occurrence, productive of great discomfort, and in aggravated cases, of actual suffering, but it is by no means so common as is supposed. Great numbers of women, especially of the poorer classes, who present themselves among the extern patients, state that "the womb is coming down," but on examination, the uterus is found to be in nearly its normal position, the sensation of dragging and bearing down, being due to a relaxed condition of the anterior wall of the vagina, which often protrudes slightly beyond the vulva, and is mistaken by the patient for the womb itself. When this proceeds to any extent, the prolapsed part contains a portion of the posterior wall of the bladder, and constitutes the affection known as *cystocele*.

Prolapse may be partial or complete; by the former we understand a protrusion of the cervix to a greater or less extent beyond the vulva; by the latter, the rarer form of complete extrusion of the whole uterus. When this occurs the vagina is everted, a portion of the bladder, and sometimes of the rectum also, being drawn down with it. In cases of old standing, when the prolapse is complete, the mass hanging

outside the vulva is frequently enormous ; in them the surface of the tumor, especially in the neighborhood of the os uteri, is covered with extensive patches of ulceration, while the mucous membrane of the vagina is so altered by exposure and the effects of friction as to resemble true skin. The annexed wood-cut illustrates this condition (Fig. 31). The patient from whom the drawing was made, was under the care of my friend, Dr. McClintock, in the Rotunda Hospital ; the prolapse was of twenty-five years' standing. Details of the case will be found in Dr. McClintock's work on *Diseases of Women*, p. 59.

These aggravated cases are not, however, of very frequent occurrence ; more commonly when the patient stands for any length of time a portion of the cervix protrudes, receding when she assumes the recumbent posture. If, however, the case be neglected, the protrusion is sure to become gradually larger, and may in time remain permanently outside the vulva.

Prolapse is always a very troublesome affection, the tendency of which also is to become slowly worse ; judicious treatment, however, often affects much good ; absolute rest in the recumbent posture, especially if the legs at the foot of the couch or bed be tilted up about a foot, is always of great use, the more so as congestion is generally present. But this postural treatment is but palliative.

Numerous kinds of pessaries have been invented with the view of supporting the uterus and retaining it in its proper position. The best for general purposes is Hodge's, the same as I recommend in cases of retroflexion. You should in cases of prolapse choose a wide one with transverse bars ; they prevent the anterior wall of the vagina from coming down, and as this is the part which first protrudes, it is important to support it. Another pessary in general use is the disk of box-wood, or vulcanized india-rubber ; those made of the latter are much to be preferred. Globular ones are also employed,

but I dislike them very much ; they are difficult to remove, and sometimes, as occurred with the patient we had here the other day, can only be extracted with the aid of a blade of the forceps. Zwank's pessary was introduced long ago for the relief of procidentia ; but, though excellent in principle, it possessed many disadvantages on account of its manner of con-

FIG. 3'.



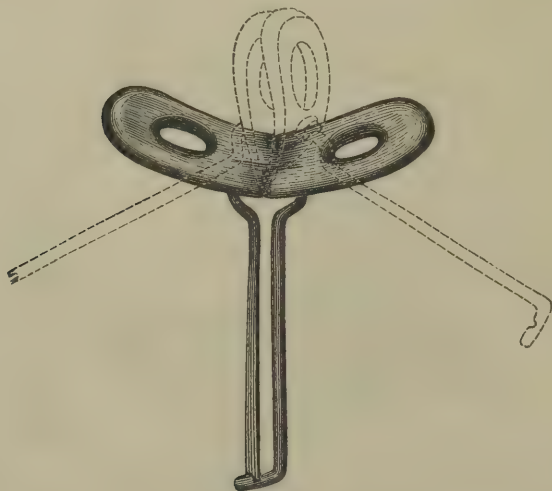
Complete Procidentia, with extensive Ulceration of the Os and Vagina,
(after McClintock).

struction. Dr. Godson, of St. Bartholomew's Hospital, has produced a modified form in which these objections are materially lessened ; it is shown in the accompanying woodcut (Fig. 32). The wings are made of vulcanite, and are intended to rest laterally, one on either side of the vagina, on the soft parts which form the floor of the pelvis ; they are introduced parallel to one another, and then made to expand by bringing the metal feet together, which instantly lock.

In order to remove the pessary these feet are pulled apart by the finger and thumb.

It is intended that the instrument should prevent the womb from coming out, just as a truss relieves a hernia, and

FIG. 32.



when lying down the one is no more necessary than the other; the pessary should therefore be removed every night and replaced in the morning.

The patient can be taught how to manage its introduction and extraction; it is therefore a form of pessary which cannot lead to the serious consequences likely to follow from being left in the vagina for a length of time, as is sometimes the case with others which are not under the control of the patient. If, however, the prolapse be large, or the perinæum much relaxed, or if it has been destroyed by laceration occurring during labor, no matter what pessary you use, it will be forced out by

the pressure constantly exerted on it. In such cases, unless you narrow the vagina by operative means, you can do but little for your patient.

Such an operation, originally suggested by Dr. Marshall Hall, has been modified and improved by Dr. Marion Sims. He removes the mucous membrane in the form of a V from the anterior wall of the vagina, the apex being near the neck of the bladder, and the two arms extended up on either side of the cervix uteri. These denuded surfaces he then brings together by wire sutures, passed transversely, thus including a longitudinal fold of the vagina; this has the effect of narrowing that canal considerably. In some of his more recent operations Dr. Sims united the base of the V by a transverse dissection (*Uterine Surgery*, p. 311). This is the best operation that can be performed, and holds out the greatest promise of a radical cure. But I must refer you to the work from which I have just quoted for further information on this point, as it is impossible for me at present to enter fully into the subject. If there be great deficiency of the perinæum, or if prolapse of the rectum (Rectocele) exist, it may be necessary subsequently to perform an operation similar in principle, but differing in details, on the posterior walls of the vagina. This proceeding is advocated by Mr. Baker Brown. The first of these operations has for its object the narrowing of the vaginal canal, the latter the restoration of the perinæum.

But neither of these operations have any direct influence on the uterus itself, which is often enlarged to a great degree. This enlargement in many cases is confined to the vaginal portion of the cervix, which becomes greatly elongated; while in not a few there is little if any descent of the uterus itself.

You saw a well-marked example of this in the woman who presented herself among the extern patients the other day.

She is an overworked needlewoman, and tells you she sits sewing for fourteen or fifteen hours daily. She suffers from partial prolapse of the uterus with great elongation of the cervix, the vaginal portion measuring at least two inches in length. She is unmarried. The perinæum is perfect and the vagina narrow ; therefore, in her case, neither of the operations just mentioned is applicable, but, on the other hand, in her you would effect much good by amputating the cervix. I have urged this on her several times, but she is unwilling to submit to the operation ; probably the inconvenience and distress which she suffers will by-and-by compel her to do so.

The operation of amputation of the cervix is a simple one ; the hypertrophied part can be removed without difficulty by means of an *écraseur*. Great care, however, is necessary in preventing any portion of the wall of the vagina getting under the wire or chain ; for if this point be not attended to it is possible that a fold of the peritoneum, or, as occurred in a case recently recorded, a portion of the posterior wall of the bladder may be drawn in and removed, and thus give rise to very serious and possibly fatal consequences. However, before having recourse to any operation, you should in all cases try palliative means. It is sometimes astonishing how much can be done by postural treatment, by astringent injections, and by the judicious use of pessaries.

One other form of displacement of the uterus requires mention, fortunately it is a rare one ; I allude to inversion. As a rule, this displacement occurs immediately after delivery, and if detected then, is generally capable of being reduced without any great difficulty ; but should the accident be overlooked, and the process of involution far advanced, the case assumes a very serious aspect. It is to such cases as these that I now refer. The treatment of the recent form you will learn when you come to study practical midwifery.

The prominent symptom present in cases of chronic inversion of the uterus, is hæmorrhage. On proceeding to examine the patient with a view of determining the cause on which this symptom depends, a tumor of variable size and smooth on the surface, will be detected projecting through the os into the vagina. This tumor may possibly be mistaken for a polypus, but a careful examination will enable you to arrive at a correct diagnosis. If the case be one of inversion, the sound, which you should invariably use in such cases, cannot be introduced, its progress being arrested by the inverted wall of the uterus, while were the tumor a polypus, having its origin from the inner surface of the uterus, the sound would probably penetrate to a considerable depth. At the same time, the bimanual method of examination will prove the fundus to be absent from its normal position, a fact which can, if necessary, be confirmed by the introduction of a finger into the rectum, the sound or a silver catheter being at the same time passed into the bladder, when if inversion have occurred the absence of the fundus from its normal position, will be proved by the fact that the sound can be distinctly felt without the intervention of any solid body.

In all cases of inversion of the uterus, I am of opinion that an attempt should be made to reduce the displacement by means of taxis carefully and judiciously applied; either directly, the hand being introduced into the vagina, or by the steady and continuous pressure exerted by an india-rubber bag placed in the vagina and retained there, when inflated, by means of a bandage; or by first one and then another of these methods. But very great care must always be exercised whenever taxis is tried, otherwise the most serious consequences may follow the attempt. Chloroform, in all such cases, should be freely administered.

Should taxis fail, Dr. Barnes advocates incision of either side

of the cervix. He directs you to "draw down the uterine tumor by means of a loop of tape slung round the body, so as to put the neck of the tumor upon the stretch; then with a bistoury make a longitudinal incision about half an inch long and a quarter of an inch deep, on either side into the constricting os, then re-apply the elastic pressure. Next day, try the taxis, and re-apply the elastic pressure if necessary" (*Obstetric Operations*, p. 449). Should taxis, steadily, carefully, and repeatedly tried, fail to reduce the inversion, no means remain at our disposal save amputation of the inverted fundus. This, if attempted, should be performed with an *écraseur*. It is an operation attended with considerable risk, and therefore it should not be undertaken unless demanded by the presence of urgent symptoms.

It is astonishing how often steady, continuous pressure, exerted in the manner described, will prove successful; but it is not sufficient that the fundus be returned within the os uteri. It is essentially necessary to take precautions to insure the complete restoration of the fundus to its normal shape, otherwise the case may be only converted from one of *complete* into one of *partial* inversion, a change hardly likely to be for the better. It is therefore advisable, if the finger be not long enough, to pass some round, smooth body into the uterus, to prove that the restoration has been perfect, the bimanual method of examination being besides invariably practiced to confirm this.

LECTURE XII.

ENLARGEMENTS OF THE UTERUS—FREQUENCY OF—CAUSES OF, CONSIDERED WITH REFERENCE TO DIAGNOSIS.

YOU must have noticed the extreme frequency with which I use the uterine sound. Indeed, I may say that I invariably employ it in the examination of all cases presenting symptoms of uterine disease, unless its introduction is contraindicated by the existence of some special cause. My reason for doing so is this, that in a very large proportion of such cases, I find the uterus enlarged and elongated. The sound enables me to ascertain whether this is the case or not; should it be so, it immediately becomes my duty to endeavor to decide as to the cause on which that abnormal condition depends. I think, therefore, by directing your attention to some of the causes producing enlargements of the uterus, I shall aid you considerably in forming a correct diagnosis in many cases of uterine disease; for while the subject of flexions of the uterus has of late years been investigated with great care, and has attracted quite as much attention as it deserves, the condition I am referring to, though intimately connected with, often indeed the cause of these flexions, has been comparatively little noticed.

It is not surprising that the old writers should have overlooked this condition, for it is only of recent years that we possess the means of investigating them, and of ascertaining with any approach to accuracy, whether, in a given case, the uterus was of its normal size or shape, or enlarged and elongated. Now, however, matters are completely altered; by means of

the uterine sound we can, in the great majority of instances, measure accurately the depth of the cavity of the uterus; and at the same time, the bimanual method of examination enables us to satisfy ourselves whether or not the uterine walls are thickened and hypertrophied.

Enlargement of the womb is met with in a very large percentage of those cases in which that organ is affected. Nor is this a matter of surprise when we remember the changes the uterus undergoes. In the virgin state, but a couple of inches in length, and an ounce or so in weight, it becomes, under the influence of pregnancy, developed into a large organ capable of containing the full-grown fœtus, and weighing several pounds; consequently any circumstance which retards or prevents the return of the uterus to its normal size after delivery, may produce, as is now well known, a condition which often results in permanent enlargement, a condition to which, as I have already explained, the term "subinvolution" is applied. But, in addition to these great changes, the result of pregnancy, the uterus every month, as each catamenial period comes round, increases in weight, and probably somewhat in size; if from any accident or imprudence the natural flow is then checked, this temporary increase may become permanent, an accident which I am satisfied is far from being of unfrequent occurrence. Here, then, at the outset, are two palpable causes of enlargement of the uterus.

We meet, however, with cases of enlargement of the uterus which cannot be referred to either of these classes. Women who have never been pregnant, and never have had any derangement of, or departure from healthy menstruation, and women who have conceived, have subsequently enjoyed uninterrupted good health for years during which pregnancy undoubtedly did not take place nor yet any derangement of menstruation occur, occasionally begin to suffer from symptoms

referable to the uterus, and on examination, that organ is found to be enlarged. This, in such cases, may depend on inflammation of the substance of the uterus, either of an acute or chronic character; on hypertrophy of the muscular and areolar tissue of the uterus; on the presence of fibrous tumors developed in the walls of the uterus, and also, as all are aware, on the existence of intra-uterine tumors of any kind, whether they be polypi, fibrous, or cancerous tumors. But it is not my intention here to enter at all on the subject of either uterine polypi or uterine tumors, except with reference to the question of diagnosis. I also purposely omit all reference to the actual existence of pregnancy, or to the retention of any of the products of conception in the uterus, as being foreign to the subject to which I wish especially to direct attention.

To recapitulate, we meet with enlargement of the uterus as the result of—

1st. Subinvolution of the uterus after labor or abortion.

2d. Congestion of the uterus from suppression and retardation of menstruation.

3d. Acute inflammation of the uterus, or possibly of its peritoneal covering.

4th. Chronic inflammation of the uterus.

5th. Hypertrophy of the uterus.

6th. The stimulus given to the uterus by the development in its walls of fibrous tumors.

7th. The existence of intra-uterine tumors.

1. Subinvolution of the uterus is now a well-known cause of uterine enlargement. There is no doubt but it is most likely to occur in those cases in which any form of inflammatory attack, whether it be peritonitis, metritis, or cellulitis, takes place subsequent to delivery. This fact has been pointed out by several writers. If, then, a patient has suffered from any such attack, the possible effect of it in retarding the normal

reduction in the size of the uterus, which should take place within a few weeks subsequent to delivery, must be borne in mind, and we should, in such cases, carefully watch for any symptom indicating the presence of this condition. As a nearly invariable rule, profuse menstruation is the first and most prominent symptom indicating the existence of enlargement of the uterus depending on subinvolution; a symptom capable of being easily explained, when we bear in mind the fact, that not only is there under such circumstances an undue amount of blood contained in the enlarged uterine veins, but also, that the relaxed condition of the muscular tissue of the uterus favors the exudation of blood. Profuse menstruation does not always occur immediately; sometimes months first elapse; but ere long, menstruation becomes profuse, and, on instituting an examination, the sound reveals the true state of the case by proving that the uterus is abnormally elongated. The depth of the uterine cavity in cases of subinvolution varies greatly in such cases. It seldom exceeds three and a half inches, but I met with one instance in which it measured upwards of five inches.

2. The occurrence of enlargement of the uterus from any cause suddenly checking menstruation, I believe to be by no means rare, but opportunities of proving this do not frequently occur; for if an unmarried woman complains of fulness and pain in the head, of pain in the back, and of a sense of weight in the pelvis, and states that menstruation has been checked by exposure to cold or by some other obvious cause, we are probably satisfied that uterine congestion exists; but we are not justified in making a vaginal examination, unless that, after a protracted trial, general treatment fails to relieve her. Again, if a married woman exhibits the same train of symptoms, the possibility of pregnancy precludes the use of the sound. Recently, however, I had an opportunity of veri-

fying the fact. A widow, the mother of thirteen children, in whom menstruation had been irregular for three years, had in June last, after a long interval, a return of the discharge. It ceased suddenly, and she suffered great discomfort from a distressing sensation of weight and bearing down in the pelvis, and of fulness and pain in the head. In her case the uterus was three inches in depth, while all the symptoms rapidly subsided under treatment. It may be objected that, in this case, we were ignorant as to what might have been the condition of the uterus previously ; but here was a woman in the enjoyment of good health, suddenly attacked, after the abrupt checking of menstruation, with distressing symptoms, in whom the uterus was proved to be enlarged, and who was relieved of those symptoms and of that condition by treatment. Is it not then fair to reason that the enlargement was a temporary condition, the result of uterine congestion, itself caused by the sudden checking of menstruation?

3. All modern writers agree that acute inflammation may produce enlargement of the uterus, and I believe that this may be the case, whether the patient suffers from peritonitis, metritis, or pelvic cellulitis. Of the two latter I have no doubt. Of enlargement of the uterus as the result of peritonitis, I had no experience till very recently, but the following case throws some light on the subject:

Mrs. K., æt. 33, was admitted into the Adelaide Hospital suffering from menorrhagia and great pelvic distress. Her last child was born fourteen months previous to admission. She stated that four weeks after her confinement, having been exposed to cold, she was attacked with severe pain over the whole abdomen. The pain, after a time, became localized in the left iliac fossa, and by degrees, nearly entirely disappeared. At the expiration of two months from the date of this attack menstruation came on very profusely, and lasted for six weeks.

She now obtained medical advice, and was treated for ulceration of the os uteri; but although the menorrhagia was in some degree checked, the pain from which she suffered again became very severe. On admission into hospital the uterus was found to be retroflected, and a certain amount of granular erosion existed; menstruation was profuse. The uterus was enlarged to a trifling extent. The use of a pessary and other appropriate treatment speedily improved the condition of the womb, and she returned home apparently cured. At intervals, however, she still suffered attacks of abdominal pain. But she again caught cold, and was re-admitted into hospital laboring under a well-marked attack of subacute peritonitis. Leeches, fomentations, and the exhibition of opium relieved her. During the course of this attack I twice measured the depth of the uterus, and found that it had increased in length by nearly an inch. She did not menstruate during this attack.

4. Chronic inflammation of the uterus being of more frequent occurrence than the acute form is a more common cause of enlargement. Such cases are constantly coming under observation. They are frequently found in connection with retroflexion of the uterus. In these cases menstruation is generally diminished, unless, indeed, a granular condition of the intra-uterine mucous membrane also exist; but this is not the form of uterine disease in which that condition is most likely to occur. The amount of elongation, too, in these cases is seldom great, the depth of the uterus seldom exceeding three inches.

5. Next I shall call your attention briefly to that condition, which, for lack of a better name, I term hypertrophy of the uterus. I mean to include under this head those cases in which the whole of the uterus, or some portion of it, slowly and imperceptibly increases in size. Sometimes the cervix alone is implicated, that portion of the organ becoming elongated and

thickened, or the body alone may be affected, while in other cases the body and cervix are equally engaged, and become thickened, enlarged, and frequently painful, the pain being apparently due either to hyperæsthesia of the nerves of the uterus, or to the pressure exercised on them by the hypertrophied tissue by which they are surrounded.

In these cases menstruation, as a rule, is but little altered in its character; sometimes it is slightly diminished in quantity and not unfrequently becomes painful, but I do not remember meeting with a case in which menorrhagia was present.

The pathology of this form of uterine enlargement is very obscure; the fibres composing the muscular tissue of the uterus appear to be elongated and thickened, while there is also hypertrophy of the areolar tissue. Both conditions may have their origin in a low form of inflammation which at the time escaped observation; but we cannot in the present state of our knowledge say why in a certain case the cervix uteri elongates and enlarges till by its very size and weight it irritates and causes distress, while, at the same time, the body and fundus of the uterus participating in the unhealthy condition of the cervix become heavy and elongated, and in another case seem to remain in their normal condition. Excessive indulgence in sexual intercourse has been set down as a cause of enlargement and hypertrophy of the cervix, but I doubt this much.

A case of hypertrophy of the cervix, occurring in an unmarried woman, has recently come under my observation. She is a dressmaker, æt. 28, an industrious woman, sitting at work for upwards of twelve hours a day. She complained of weight in the pelvis and of bearing down. She also suffered from the most obstinate constipation. Menstruation was regular, but generally accompanied by pain. On making an examination the os uteri was found to rest on the perinæum; the cervix was elongated and thickened, and the fundus slightly enlarged.

This woman would not come into hospital, and consequently I have had no opportunity of trying the effects of treatment, from which, in truth, I would anticipate but little benefit.

Any person who has read MM. Bernautz and Goupil's work on *Diseases of Women*, published by the New Sydenham Society, will at once see that the condition I am now referring to is very similar, if not analogous, to that termed by M. Huguier, "allongement hypertrophique" of the uterus; a condition which he divides into two classes, namely, subvaginal and supra-vaginal, a division the actual value of which I do not highly appreciate. I am inclined to the opinion that, although we may have enlargement of the body of the uterus without the cervix being engaged, the cervix is never enlarged for any length of time, without the supra-vaginal portion of the organ becoming implicated in the disease. I also believe that not a few of the cases recorded by M. Huguier were cases of subinvolution of the uterus following delivery, and not of the condition which I have termed hypertrophy.

But, in addition to these cases of hypertrophy with elongation of the cervix or of the body of the uterus, or of both, we meet with cases in which there is no elongation, but the very reverse. We sometimes find the cervix shortened, drawn up, as it were, into the body of the uterus, sometimes disappearing altogether. In such instances the body of the uterus assumes a globular form. This form of enlargement gives rise to considerable distress, and it seems specially to cause intractable irritation of the bladder. In one case, which was for years occasionally under my observation, this symptom was the prominent one, and that for which the patient sought relief.

There is no form of uterine disease in which so little can be effected by treatment as that to which I am now referring. If the body of the uterus be engaged, it seems nearly useless. If, however, we are satisfied that the cervix only is affected, ampu-

tation may be resorted to with advantage ; or possibly local depletion and subsequently the repeated application of Dr. Greenhalgh's iodized cotton may effect some good.

6. It remains for me to allude, and I shall do so very briefly, to that form of uterine enlargement in which the organ is stimulated, and increases in size, from the presence of a fibrous tumor imbedded in, or growing from, some portion of its walls. Cases are recorded in which a fibrous tumor of very small size, perhaps not larger than a nut, so stimulated the uterus that it increased to five or six times its normal size, the cavity too being proportionately elongated. These cases are most perplexing, a *post-mortem* examination alone being capable of revealing their true nature. Fortunately they are not of frequent occurrence. In the great majority of instances a fibrous tumor sooner or later will bulge into the cavity of the uterus, or project out on the peritoneal surface. In either case the tendency of disease is to render menstruation more profuse ; while in that form of enlargement depending on hypertrophy of the fibrous tissue of the uterus, and which is the only form liable to be confounded with the one now under consideration, menstruation, if interfered with at all, is more likely to be diminished than increased. The subject of fibrous tumors of the uterus does not come within the scope of the present lecture. I wish, however, to draw attention to those cases, of by no means unfrequent occurrence, where enormous fibrous growths exist, in which the womb is imbedded and almost lost. These cases have over and over again been mistaken for ovarian tumors, a mistake which the use of the uterine sound should enable us to avoid. It tells us not only what is the length of the uterine cavity, but also whether the uterus is free or imbedded in the tumor.

Now, as to diagnosis. I have already stated that the sound and that alone enables us to decide as to whether the cavity of

the uterus be elongated or not, but it affords us no clue as to the cause of the enlargement. A few general rules, however, if they do not enable us to give a positive diagnosis, will at least facilitate materially our decision as to the nature of any case. Thus, if we meet with an enlarged uterus in a woman who has aborted or been delivered at the full time, even though several months have elapsed, the probability is in favor of the enlargement being dependent on subinvolution, and this opinion will be confirmed if menorrhagia be present, as is nearly always the case, at least when the affection is of recent origin. Again metritis, pelvic cellulitis, or peritonitis, if present or of recent occurrence, are fully sufficient to account for this condition of the uterus, and it should be always borne in mind that it does not follow that the enlargement will disappear with the subsidence of the inflammation; in other cases we should ascertain if menstruation has been checked or suppressed, and if symptoms referable to the uterus have followed on this; or if again, pain in the back and over the pubes was first noticed, menstruation being subsequently lessened or suppressed. In the former case we are likely to find that the enlargement depends on congestion, in the latter on chronic inflammation. It is of no small importance in deciding on the cause to which enlargement is due, to note the condition of the menstrual function, for that will often, in doubtful cases, materially aid our diagnosis; thus if the enlargement be the result of chronic inflammation, it will most probably be lessened in quantity; if to subinvolution, the flow will be augmented. Then, again, if there be menorrhagia in cases of enlarged uterus, unconnected with any of the causes noticed, we may expect to meet with intra-uterine polypus, or fibrous tumors, and it will be our duty to clear up the doubt which exists, by dilating the cervix and exploring the interior of the uterus.

As I have called your attention to the subject of enlarge-

ment of the uterus with the hope that I may aid you in arriving at a correct diagnosis in cases in which that condition exists, I shall not enter at any length into their treatment ; that of subinvolution was fully discussed on a previous occasion (Lecture V), and I must refer you to what was then said on the subject.

In cases of enlargement following sudden suppression of menstruation, the administration of saline purgatives, and subsequently of the bromide and iodide of potassium, conjointly in full doses, will generally, if the case be recent, prove sufficient ; but should it have been neglected in the early stages, it will probably pass into the condition of chronic inflammation, a condition over which medicines possess little influence. The prolonged use of the perchloride of mercury, in doses of $\frac{1}{20}$ th of a grain three times a day, has been recommended in these cases. I have seen, I think, more benefit result from local depletion by puncturing the cervix uteri, than from anything else, and it is a mode of treatment deserving a fair trial. To be of use it must be repeated frequently at intervals of about five days. The application to the verge of the anus, of two or three leeches, immediately after the termination of a menstrual period, where menorrhagia is present in connection with a relaxed and engorged uterus, also often proves beneficial.

In cases where the uterus has become enlarged and hardened, as the result of chronic inflammation, the use of the waters of Ems or Kreuznach seems sometimes to have a very beneficial effect, and if the patient's means are such as to admit of her visiting either place, a trial should be made. As to hypertrophy of the uterus, treatment is seldom likely to effect good.

In cases of enlargement of the uterus from inflammation of an acute character, I believe that rest, the exhibition of opium,

and the application of warm poultices over the abdomen are the means upon which we should most rely. Depletion, if practiced at all, should be in a limited degree by a few leeches externally. Mercury I consider to be not only useless, but actually deleterious.

LECTURE XIII.

CANCER OF THE UTERUS—PATHOLOGY OF—VARIETIES MET WITH IN THE UTERUS—MEDULLARY AND EPITHELIAL CANCER—SYMPTOMS—HÆMORRHAGE—PAIN—FETID DISCHARGE—CAULIFLOWER EXCRESCENCE—AMPUTATION OF CERVIX—GENERAL TREATMENT.

I PROPOSE to-day, gentlemen, to call your attention to the subject of cancer of the womb; of which disease, unfortunately, we have had several examples recently. You must not suppose that the subject is unimportant because the disease is in all probability not susceptible of cure, for you can sometimes prolong life, and always alleviate suffering; besides it is of great importance that you should be capable of recognizing the existence of cancer, and of being able to pronounce that a disease which may simulate it is not malignant. The idea of cancer is ever present to the minds of women, and few of them suffer from any chronic ailment, the symptoms of which are referable to the uterus, without fearing that they are the subjects of that dreadful disease, and are sure to question their medical attendant closely. I need not delay in pointing out how injurious it would be to your character were you to pronounce a woman to have cancer, who labored under such a comparatively innocent disease as inflammatory hypertrophy of the cervix uteri. Or how lamentable would be the consequences, were you to assure your patient that nothing serious was wrong with her when death was inevitable. Yet both these mistakes are frequently made; mistakes for which there is but little excuse.

Cancer of the womb is most frequently met with in women who have passed, or at least attained middle age; but this rule must be received with great reservation. Women under thirty are not unfrequently attacked with it, and it is important that you should bear this in mind, lest, misled by the youth of your patient, you should give a favorable prognosis in what is really a hopeless case. Still it is in the decade between forty and fifty that the greatest proneness to the disease manifests itself, fifty per cent. of all the cases occurring between these ages. This, you are all aware, coincides with the period at which what is termed "the change of life" in woman takes place, when menstruation and the other functions of the reproductive system cease.

There is no disease the symptoms of which are so uncertain as those which usher in cancer of the uterus; very frequently indeed, it develops itself so insidiously that the patient's attention is only attracted to what she supposed to be a very recent malady, when in reality our first examination proves the disease to be far advanced towards its fatal termination. The patient, Mrs. S., in No. 6 ward, is a striking example of this fact. She believed herself to have been in good health up to the 4th of last month, when hæmorrhage set in; but this is impossible, for the entire of the vaginal portion of the cervix is already destroyed, the uterus is firmly fixed by the deposit of cancerous matter in the surrounding tissues, and a gaping opening, surrounded by a jagged, indurated, and ulcerated mass, is all that is left of the lower segment of the uterus. Her end cannot be far distant. Yet it is but a month since her attention was first attracted to her condition.

Now, gentlemen, I must take it for granted that you all know something of the pathology of cancer. This is a part of the subject which I cannot dwell on at any length in a clinical lecture—I shall only say, lest I should have any hearers who

are altogether ignorant of the subject, that this dreaded disease consists primarily of the deposit or more properly of the development of an abnormal material in tissues hitherto healthy, and which, consisting in a great degree of cells of a peculiar formation has a great tendency to invade neighboring structures, and at a later period to take on a process of destructive ulceration. Dr. West, adopting the words of Müller, defines cancer to be "those growths which destroy the natural structure of all tissues, which are constitutional from their very commencement, or become so in the natural process of their development, and which, when once they have infected the constitution, if extirpated, invariably return, and conduct the person who is affected by them, to inevitable destruction." But, in truth, the origin of these growths is a puzzle to pathologists. Of the various forms of cancer, two only are as a rule met with in the uterus, namely :

1st, the medullary, and

2d, the epithelial.

Instances no doubt of true scirrhus, or hard cancer, and of colloid, or gummy cancer, are recorded, but they are exceedingly rare, and we may for the present set their consideration aside ; the more so as, with the exception of the greater slowness of progress, there is not any essential difference between the course of these two varieties and that of the medullary form.

As already stated, the first step in the production of the disease is the growth of the cancerous matter in the substance of the healthy organ ; and I may here remark that it is in the vaginal portion of the cervix uteri that this nearly invariably occurs. Why this should be is not clear, but such is the fact. In a few rare instances, however, the body or fundus is the seat of the disease.

Medullary cancer appears in general first to attack the sub-

mucous tissue of the vaginal portion of the cervix, and subsequently extend to its muscular structure. Very soon the adjacent parts become implicated. Cancerous matter is deposited between the uterus and the bladder anteriorly, and the rectum posteriorly, and in consequence the cervix becomes fixed and immovable. By and by the mucous membrane at some point gives way, and an ulcerated surface is formed. The feeling communicated to the finger by this ulcer is unmistakable. It is hard, irregular, with sharp edges, and generally bleeds on the slightest touch. The ulceration extends with considerable rapidity; occasionally, indeed, granulations arise on its surface, and at one point an attempt may be made at cicatrization; but this soon gives way, the granulations disappear, and the disease spreads as before.

When this stage is reached, we generally find a most characteristic discharge present. It is dark in color, profuse, and fetid. Sometimes the fœtor is so strong and unmistakable that it is possible to diagnose the disease from the smell alone, even before we make any examination; but this is not always so. The patient whose case I have alluded to is an example of this latter condition; for though the disease is in such an advanced state, she has but little discharge and that by no means fetid. Hæmorrhage, too, if not previously present, is now nearly sure to occur, and it is very probable that the decomposition of clots of blood within the uterus may be one, though not the sole, cause of the fetid character of the discharge. The disease is all this time spreading upwards, and engaging the body of the uterus, and sometimes cancerous masses project into its cavity, while, at the same time the vagina, also, nearly invariably becomes involved. Sometimes, the posterior wall being affected, the disease extends backwards till the rectum becomes implicated; but, more commonly, it is the anterior wall which is chiefly engaged.

When life is prolonged beyond this stage, the ulceration may destroy not only the muscular structure of the vagina, but also the adjacent walls of the bladder or rectum, or even of both. And then to the sufferings previously experienced, are added the miseries incidental to vesico- or recto-vaginal fistula. Under such circumstances death is brought about by a process of gradual exhaustion; more frequently, however, the patient sinks at an earlier stage from the effects of the constantly recurring hæmorrhage. The following accurate description of the *post-mortem* appearances usually met with in cases of cancer is given by Mr. H. Arnott, in vol. xxi, of the *Transactions of the Pathological Society of London*: "It will be noted that in nearly every case the seat of disease is the same. The os and cervix are more or less completely destroyed, and the foul ulcer resulting includes the upper part of the vagina. In more severe cases the floor of the bladder is invaded, and perhaps freely perforated, whilst even the rectum may be opened into the vagina, the uterus itself being sometimes almost wholly consumed in the general havoc. In one remarkable case the os and cervix remained whilst the whole body of the uterus was destroyed by cancer." The pelvic glands are frequently the seat of secondary cancerous deposit, while in not a few the ovary and even more distant organs, including the heart and lungs, may become implicated in the disease.

Now, with respect to epithelial cancer, which is the other form so commonly met with in the uterus. It differs from the medullary in this, that it is generally developed as an out-growth, or excrescence from the cervix uteri. In general it seems first to appear as a tubercle, this increases rapidly, after a time it becomes fissured, and branches out, so as to form a soft irregular mass, commonly called, from its resemblance to the vegetable of that name, "cauliflower excrescence;" a resemblance, however, which is frequently wanting. The discharge

arising from this is very profuse and watery, but is not generally so fetid as that proceeding from the medullary form. The growth often attains a considerable size, sometimes forming a mass completely filling the vagina, and which, from being very vascular, is invariably accompanied by hæmorrhage.

Epithelial cancer occasionally attacks the vagina as a primary disease. We have had two examples of this recently in hospital; in one, the superficial ulceration extended to the very vulva, and the patient sank worn out by pain and repeated though trifling attacks of hæmorrhage. In her case the entire surface of the vagina was constantly covered with a dark, pultaceous slough. The other was admitted for profuse hæmorrhage which threatened life. This was found to proceed from a spot on the anterior wall of the vagina, not larger than a split pea; it was hard to the touch, and had a puckered appearance. In a third case, a large mass of epithelial cancer grew from the posterior part of one labium.

Having thus given you an outline of the course which cancer usually runs, I must refer to the symptoms it gives origin to. In the early stages at least they are most vague and uncertain. To such an extent, indeed, is this the case, that we not unfrequently meet with instances in which the entire of the lower portion of the cervix uteri has been destroyed by the ravages of disease, and yet the existence of cancer has never for a moment been suspected either by the sufferer herself or by her friends. The patient to whom I have already referred affords a well-marked example of this. She is a married woman, æt. fifty, has given birth to twelve children, and has had two miscarriages. Six years ago she ceased to menstruate, and was perfectly free from any symptom of uterine disease up to the 6th of December, when she noticed a discharge which resembled in all respects natural menstruation, being red in color, free from smell, moderate in quantity, and not accompanied by

pain. The appearance of this discharge did not cause her any anxiety, and she continued apparently to enjoy her usual good health till three weeks ago, when (on the 4th of January) she was suddenly attacked with profuse hæmorrhage, which has not as yet entirely ceased. At no time has there been any fetid discharge, nor did she suffer pain, except a dull back-ache, apparent the result of debility. But, on making a vaginal examination, we found the uterus fixed by the deposit of a large quantity of cancerous matter in the tissues surrounding the organ, while the lower portion of the cervix was already destroyed by the process of ulceration, and a wide, gaping, irregular opening, led up to the body of the uterus. Now, this case is very instructive—it shows how insidious the disease may be. Not only is there an extensive deposit of cancerous matter, but a considerable portion of the uterus has been destroyed by ulceration, and yet till three weeks ago she presented no symptom of disease, except a slight colored discharge, which appeared four weeks previously, and which she believed to be a return of normal menstruation. Moreover, it shows that you may have extensive cancerous ulceration without its being accompanied either by pain, fetid discharge, or any appearance of cancerous cachexia. But cases of cancer usually present all these symptoms in a greater or less degree. You will therefore be correct in considering hæmorrhage, fetid discharge, pain and cancerous cachexia as being the symptoms of cancer of the uterus, though none of them are necessarily present. I shall say a few words on each.

First, with respect to *hæmorrhage*; it is the most common and most important of them all; it is also the one which, as in the present instance, is generally first noticed. If the patient has not ceased to menstruate, she will probably tell you that her attention had been attracted by observing the catamenia to become much more profuse, and to last a longer time

than formerly ; then, that the discharge has commenced to appear irregularly, returning at intervals of a few days, till finally it is almost continuous. If, on the other hand, she has passed the "climacteric" period of life, the first symptom most probably will be—as was the case with the patient first alluded to—the sudden appearance of hæmorrhage, which is occasionally profuse. Sometimes hæmorrhage occurs before any ulceration has taken place ; this is especially likely if menstruation have not previously ceased ; but it is after ulceration has occurred that it, as a rule, becomes so prominent, and often so alarming a symptom. Cases, however, are met with in which it is not present at all ; they are, however, rare. It may not be an early, or a prominent symptom, but seldom, indeed, is it altogether wanting. In general, as the disease advances and the ulceration spreads, the bleeding becomes more profuse, sometimes in the form of a continuous draining, more frequently as well-marked attacks of hæmorrhage, occurring at short intervals, often alarming, and threatening life itself, sometimes even proving fatal, though much more frequently the patient dies from the exhaustion consequent on the frequent losses of blood.

Pain.—Of the symptoms indicative of cancer, pain is the most fallacious. Cancer, in its early stage, is, without doubt, in general, a painless disease. This statement is, I am aware, directly at variance with preconceived notions. Women invariably associate the idea of pain with the existence of cancer, and believe the absence of suffering to be impossible ; this is, however, a popular error. I have but to refer to Mrs. S., the patient to whose case I am specially calling your attention, as a proof of this. Here is a woman dying of cancer, and yet she is entirely free from pain ; I fear, however, that her prospect of this immunity from suffering continuing to the last is very doubtful, for as the disease progresses, pain is seldom absent ;

frequently, indeed, it becomes almost unbearable, so terrible are the paroxysms, so excruciating the agony. Bear in mind, however, that this applies to the stage of ulceration only. This absence of pain forms one of the chief diagnostic marks between chronic inflammation of the cervix and *cancer in its early stages*. When you meet with a patient who has for a lengthened period suffered from pain referred to the back, to the uterine, and especially to the ovarian regions, shooting down along the inside of the thighs, and who on examination proves to have a thickened, indurated cervix, the uterus being movable, the probability is, that this is due to chronic inflammatory hypertrophy, and not to malignant disease.

But, as already mentioned, the immunity from suffering generally ceases after ulceration has taken place; we find, too, that the attacks of hæmorrhage often come on during severe paroxysms of pain, and seem to relieve them, leading to the supposition that the pain is due to some form of congestion, for were it not so, the hæmorrhage could hardly bring relief, as undoubtedly it often does. Be this as it may, the fact remains, that the terrible sufferings in the second stage of the disease present a marked contrast to the immunity experienced in the first; and though there may be occasional instances in which pain is absent even to the last, they are unfortunately rare.

Fetid Discharge.—This, too, is a symptom of variable occurrence; ordinarily a discharge accompanies the early stage of malignant uterine disease, but not to an extent sufficient to alarm the patient; as changes in the cervix take place, however, and an open cancerous ulcer is formed, the discharge assumes a different character, it becomes more profuse, dark-colored, and fetid. In many instances this odor is so marked, that without asking a question or making an examination, the experienced physician can pronounce the patient to be suffering

from malignant disease. Sometimes the fœtor is intolerable, and the profuseness and acidity of the discharge so great, as to add materially to the patient's suffering by giving rise to painful excoriations. In epithelial cancer, the discharge is more watery and seldom so fetid as in the medullary form.

The cases of cauliflower excrescence which have been for some time past in our wards, differ in many respects from that of Mrs. S., who afforded us an illustration of the medullary form. One patient, E. K., aged only twenty-three, is five years married, but has never been pregnant. She states that she was quite well till about two months ago, when menstruation became suddenly profuse; shortly afterwards she perceived a fetid watery discharge appear in the intervals between each period. She suffered from severe left side pain of a paroxysmal character, which became aggravated before each attack of hæmorrhage, and also from diarrhœa. On examining her after admission, the whole of the upper third of the vagina was found to be occupied by a large mass of epithelial cancer; the disease had also extended to the anterior wall of the vagina. Her case was hopeless; we could but relieve her pain by subcutaneous injections of morphia, and check the discharge by astringent lotions, and by the exhibition of gallic acid, acetate of lead, opium, etc. She died shortly after.

In another case I at first entertained hopes of being able to save, or at least to prolong life.

This patient was a young woman, aged twenty-eight, married, and the mother of one child, who, at the period of her admission into hospital, was four years old; in the interval which had elapsed since its birth she had had three miscarriages, the last occurring twelve months prior to her admission. Her health had been very good up to October last, when she remarked for the first time, a sanguineous discharge, which appeared in the interval between two regular menstruation

periods. It only lasted three or four days, and then ceased, but reappeared at irregular intervals during the next four months, never lasting more than a few days; and as her general health continued good, she paid no attention to it. In March last this discharge became more profuse, and when admitted into the hospital on the 16th of April, she was in a very anæmic condition. She complained of weakness and of pain in the back, but of nothing else. The discharge, which was very profuse, was of a sanguineous, watery character, and not very fetid. On making a vaginal examination, a cancerous mass, about the size of a hen's egg, was found, growing mainly from the posterior lip of the os uteri; the anterior lip was also engaged, but in a less degree. The vagina was not implicated in the disease, the uterus was movable, and on passing the finger upward, the cervix uteri appeared to be perfectly healthy. I therefore thought it to be one of those cases in which it would be justifiable to give the patient a chance of prolonging life by operation, and determined to attempt the amputation of the entire of the cervix uteri above the diseased portion. This was done accordingly with the *écraseur*. Much difficulty was experienced in getting the wire round the cervix, the mass being large and filling up the vagina. However, after some little manipulation, I succeeded in encircling the cervix above the growth, but the moment I attempted to constrict the cervix by tightening the wire, the apparently healthy tissue yielded, the wire of the *écraseur* became entangled and imbedded in a mass of soft cancer, and I found it impossible to remove the entire of the cervix. We succeeded, however, in getting away a large portion, and the stump was then freely cauterized with strong nitric acid. The patient experienced no pain subsequently, and she improved greatly after the operation; the hæmorrhage entirely ceased; she put up flesh, and was discharged after a few weeks. I

was aware at the time that this improvement could only be temporary, and I was not, therefore, surprised when the poor woman again sought admission, after the lapse of about six months, to find that she was in a hopeless condition, dying rapidly; she expired a few days subsequently.

On making a *post-mortem* examination, the body of the uterus was found to be perfectly healthy. The cavity did not exhibit the slightest trace of disease; it was entirely confined to the lower portion of the cervix, from which the cancerous mass could be seen growing. The vagina, which had not been affected when she was first admitted, was also now engaged.

This case presented four points of interest. First, it showed at what a very early age this form of cancer may attack the uterus. Secondly, it illustrated the possibility of hereditary taint, for she stated that her mother and two of her own sisters had died of uterine cancer. Thirdly, it showed in what an insidious manner epithelial cancer may come on. When she was admitted, she was in a nearly hopeless state, and yet believed herself to have been ill but for a few weeks, and complained only of weakness. Lastly, as to the operation. It proved how very unpromising it is. However, this was a case in which it was justifiable, and the woman's life was certainly prolonged by it.

In a third case the operation of amputating the cervix promised very satisfactory results. The patient, a married woman, aged forty, was sent into hospital for the relief of what was supposed to be incontinence of urine. Neither the woman herself, nor the surgeon who had seen her, had any idea that she was the subject of uterine disease. She was free from pain, and merely complained of weakness, and of a constant watery discharge, which saturated her linen, and which she supposed to be urine. However, on making a vaginal examination a large mass, evidently a malignant growth, was

found springing from the lips of the os uteri. On passing the finger beyond this, apparently healthy tissue could be felt. I, therefore, determined to remove the whole cervix without further delay. The cervix was easily encircled with an iron wire, but so very dense was the tissue to be divided, that this broke. However, by substituting for it a strong steel wire, I was enabled to divide the cervix. Considerable hæmorrhage followed, which was restrained by the application of the perchloride of iron. This woman made a rapid recovery, and was discharged a few weeks ago, apparently cured, for the whole of the diseased mass was removed; a section of the divided surface examined under the microscope exhibiting no trace of cancer cells. This case was instructive from the almost total absence of symptoms. Our hopes of effecting a permanent cure proved, however, in this case also, to be fallacious. After the lapse of a year this patient presented herself again. She stated that for months after the operation she had enjoyed good health, but that of late her abdomen had begun to enlarge, and pain of an intense character to be always present. On examination the uterus appeared to be healthy, and nothing definite could be made out to account for her great sufferings. Her condition, however, rapidly became worse, and she died within a month in the greatest agony. On a *post-mortem* examination being made, death was proved to have been due to the growth of an enormous mass of soft, jellylike substance, which filled up the whole of the right inguinal region, and which was evidently of a malignant character; the uterus was healthy. Here the disease had without doubt been eradicated from the uterus, the organ first attacked, but only to reappear, and in another locality, in different and aggravated form. Still, by the operation life had been prolonged for quite a year.

As a commentary on this case, the following extract from Dr. Graily Hewitt's work is very appropriate: "As a palli-

ative measure frequently, as a curative measure occasionally, amputation of the cervix uteri (in such cases) is a valuable operation; it may possibly prevent a fatal result altogether; it will almost certainly postpone that fatal result even when inevitable. The bleeding and a copious exhaustive discharge are at once arrested, and for a time the source of danger is removed." I can add nothing to this passage; and though in cases in which extirpation is out of the question, I shall continue to use nitric acid or caustic potash as I have hitherto done; or try the acid nitrate of mercury, as suggested by Dr. Baker, of New York; or even, perhaps, that rather unmanageable remedy, bromine, which, according to Dr. Routh, "not only arrests the disease locally, but also the cachexia which accompanies it;" still, where it can be performed, extirpation is decidedly to be preferred. I use the word extirpation advisedly. In the cases just narrated, amputation of the cervix uteri was the operation performed. But Dr. Marion Sims has recently introduced a new one, which promises good results. Instead of amputating the cervix, an operation which in many cases fails to remove more than a portion of the diseased mass, he boldly follows the disease right up into the uterus, removing by means of curette first, and then by scissors and knife, not only every portion of the diseased mass, but also the indurated gristly tissue subjacent to it, the dissection being carried up in some instances beyond the os internum, necessarily a portion of the uterine wall is also removed. This bold operation is, if carefully performed, quite safe; doubtless it is very tedious, but the bleeding is not great. I have performed it twice, but as the patients are still under treatment, I can give no definite opinion as to the final result, but I believe Dr. Sims when he says, that though cure in cases of cancer is seldom to be hoped for, from the liability of the disease to recur in another or the same organ, still that the operation gives much greater hopes

of success than mere amputation, and that as a matter of fact he has patients under his observation for two or three years without there being as yet any recurrence of the disease.

In order to perform this operation efficiently, it is necessary to procure the knife invented by Dr. Sims for the purpose. My first operation was performed with an ordinary knife, and it was not satisfactory. I then obtained from M. Collin, Maison Charrière, Paris, Dr. Sims's knife; it is a beautiful and ingenious instrument; the blade can be fixed at any angle, and my second operation performed with it was all that could be desired; the dissection, which occupied nearly an hour, reached beyond the os internum; the large gaping **A** shaped cavity which represented the canal of the cervix was then filled with cotton previously saturated with the *Liq. ferri perchloridi fort.*, and partially dried. This was left *in situ* for some days till it loosened of itself, and came away with the fluid used in syringing the vagina. After it had been removed, the cavity, somewhat contracted by this time, was again packed with cotton saturated with a strong solution of the *chloride of zinc*, and partially dried. This application caused, as it always does, much irritation, and some pain. The cotton was left in the cavity for four days, and on its removal no further treatment was adopted. The cavity contracted rapidly, and the present condition of the patient is promising. I look upon this operation as a most important improvement in uterine surgery.

I have hitherto spoken of cancer as being a disease of the cervix uteri, and in the very great majority of instances this is true; but even to this rule there are exceptions, though they are very rare. The only example of it which has come to my knowledge, was one brought under the notice of the Pathological Society by my colleague, Dr. James Little. Neither the rectum, bladder, vagina, or cervix uteri were invaded by the disease, but the whole of the body of the uterus seemed to

have been converted into a mass of encephaloid cancer, and yet had a speculum been introduced in this case, the os would have been found small, and without any appearance of disease. With respect to such cases as these I have only to say, that, impotent as we generally are for good when cancer attacks the cervix, we are utterly powerless when the disease originates in the body of the womb.

When speaking of chronic inflammation of the cervix uteri, I mentioned that the induration which it produces has been mistaken for that which results from cancer. I think I shall best enable you to form a correct diagnosis between these two affections by following the example of Dr. West (*Diseases of Women*, p. 384), and arranging the symptoms of both in a tabular manner, so that you may the better be able to compare them.

IN CHRONIC INFLAMMATION OF
CERVIX.

The history of the case is always chronic, often dating back several years.

Pain—always present; generally more severe over left ovary than elsewhere.

Menstruation scanty and frequently painful.

Digital examination—Cervix feels hard to the touch, but smooth; pressure with the finger causes pain.

Uterus—Movable.

Vagina—Not implicated.

Discharge—Inodorous and mucopurulent.

IN CANCER.

History—Symptoms seldom noticed till within a comparatively recent period.

Pain—Seldom felt in the early stages; most severe in the back.

Menstruation—If patient be young will be increased; if advanced in life, hæmorrhage may be the first symptom noticed.

Digital examination—Cervix indurated, uneven and nodulated; pressure does not cause pain.

Uterus—Fixed.

Vagina frequently implicated.

Discharge—Generally fetid.

Having given an outline of the ordinary course which medullary cancer of the uterus follows, and dwelt on its leading features and symptoms, I must in conclusion allude to the treatment. Unfortunately we can seldom do more than alleviate the most prominent symptoms. With the view of deadening the pain, opium in some shape or form must be our main reliance; chloral will often fail, if the sufferings be excessive, even to produce sleep. Opium is best administered either *per rectum*, in the form of suppositories, or by being injected subcutaneously, commencing with gr. $\frac{1}{8}$ or $\frac{1}{4}$ of morphia. No doubt the subcutaneous injection of morphia acts more rapidly, and its effects last longer than those of opium administered in any other manner, while it is, I think, less deleterious in its after consequences. Of astringents administered with a view of checking the hæmorrhage, gallic acid is, probably, the best. If the bleeding be very severe you may be compelled to plug the vagina; but I prefer in these cases, endeavoring to stop it by the direct application to the cervix of a pledget of cotton saturated with a strong solution of the perchloride of iron in glycerin.

To lessen the fetor of the discharge, you had better add half an ounce of the solution of the permanganate of potash to a pint of tepid water, and direct this quantity to be thrown up the vagina at least twice a day; or you may employ for the same purpose a weak solution of carbolic acid. For convenience you may order an ounce of carbolic acid to be dissolved in eight ounces of water, a tablespoonful of which is to be added to half a pint of tepid water for injection into the vagina. Another lotion which is sometime useful both in allaying the pain and lessening the discharge, is a solution of nitrate of silver of the strength of ten grains to the ounce—two or three ounces of this should be injected at a time. Of internal remedies, arsenic and iron are the only ones which will effect any

good ; indeed I confine myself nearly altogether to the administration of the latter, and of its various preparations I prefer either the tincture of the perchloride, or, if the stomach be irritable, the ammonio-citrate. The diet should of course be nourishing, but unstimulating. In cases of cauliflower excrescence there is always the chance, if the case is seen early, of your being able to prolong life by amputating the cervix, or better still, by performing Dr. Marion Sims's operation which I have just described, or possibly of destroying the growth by repeated applications of caustic potash. I effected the latter in the case of a woman aged nearly sixty ; but the disease returned after the lapse of a few months, and then proved fatal. Indeed, no matter what treatment be adopted, you should always let it be clearly understood that the result is very doubtful.

LECTURE XIV.

OVARIAN CYSTIC DISEASE—PATHOLOGY—UNILOCULAR, MULTILOCULAR,
AND DERMOID VARIETIES—SYMPTOMS—DIAGNOSIS.

As I have performed the operation of ovariectomy twice in our wards within a comparatively recent period, one of the patients being still in hospital, I do not think it likely that I shall have a better opportunity than the present of drawing your attention to the subject of ovarian disease. The affections to which these organs are liable have, till within the last few years, been looked upon as almost incurable; but now, as you are all aware, the extirpation of one or both ovaries when in a state of disease, is performed with great frequency, and although the result is most uncertain, and though patients doubtless die from the effects of the operation who might otherwise live for years, still the number of women whom its performance has restored to perfect health is so great, that it steadily increases in professional favor.

The affection to which I shall first direct your attention, is that known as cystic disease of the ovary, by which term is understood the development of a cyst, or sac, or of several cysts within or adjacent to the ovary, which are filled with a fluid, or semifluid substance produced in their interior. The development of cysts in the ovary is of very frequent occurrence. They are met with of all sizes, from that of a pea, to that of a large sac capable of containing many gallons of fluid. Pathologists admit that the ovarian cyst may be in the first instance

the mere dilatation of a Graafian vesicle, this question having been virtually settled by Rokitansky's discovery of an ovule within one of these diseased cysts. As the cyst grows all trace of its origin is lost, and the sac thus formed, becoming distended with fluid, gives origin to the simplest form of ovarian dropsy, to which, from there being but one cyst present, the term "unilocular" is applied.* But very generally more than one cyst is developed, several of the Graafian vesicles becoming simultaneously affected. In the early stages we may have a cluster of small cysts, none of them perhaps larger than a currant; then, after a time, one or two of these seem to take on a condition of active life, and to become rapidly developed, swelling and increasing, till they attain a large size, while the others remain stationary or increase slowly. To this aggregation of the cysts, the term "multilocular" is applied; the multilocular tumor is much more frequently met with than the unilocular.

The contents of these cysts vary in as great a degree as do their appearance. The unilocular generally contain a light straw-colored fluid, very like serum in chemical qualities. Sometimes, however, it is turbid and ropy, and occasionally seems to contain blood. In the multilocular, the contents of the cysts even in the same ovary vary much; in some they are similar to that just described; in others, they consist of a thick gelatinous-looking mass, which is sometimes black and tenacious. Again, the walls of contiguous cysts, containing fluids essentially different, may be absorbed under the influence of pressure, and the contents becoming commingled, we have then a fluid, partly thick and tenacious, and partly aqueous. But in addition to this growth by the amalgamation of

* According to Mr. Lawson Tait unilocular tumors are not of ovarian but of parovarian origin.

contiguous cysts, there is yet another and very important process by which these cysts increase, that is, by the development within the parent cyst, of numerous other cysts. These, according to Dr. Hodgkin, whose observations have been confirmed by Sir J. Paget, may be either sessile or pedunculated, and may cluster in warty-looking masses on the inner surface of the sac. Thus by the growth of the older cyst, and the rapid formation of the new, the ovarian tumor sometimes enlarges with an alarming rapidity, and then the disease generally proves fatal in a very brief space of time. But ovarian tumors are seldom made up of these fluid-containing cysts alone. We frequently also find a considerable amount of so-called solid matter present; this solid matter is produced at the same time as the cyst; sometimes it is small in quantity, sometimes in bulk it exceeds that of the fluid contained in the cyst, and it may form a tumor of enormous magnitude.

These partly cystic, partly solid tumors, to which the term "compound" is usually attached, are probably the most common form of ovarian disease. Solid matter exists in them under various forms. One, which has been described by Mr. Spencer Wells as being identical in structure with the adenoid growths found in connection with the mammary gland, has been called by him *Adenoma* of the ovary. Another remarkable one was long looked upon as malignant, a view now proved to be erroneous; it is termed *Alveolar*, and is likened by Dr. Farre to a sponge, the cells of which are filled with a jelly-like substance. Other varieties of solid material are also met with in these cases of compound ovarian tumors; but it would be impossible for me to enter with any degree of minuteness into pathological details, for I desire in these lectures to confine myself as strictly as possible to the clinical aspect of the diseases of which I treat, and therefore must refer you to the writings of Paget and Farre, or to the admirable systematic

works of Graily Hewitt, West, Gaillard Thomas, Barnes, and others, for further information on the points which I feel compelled to omit.

There is, however, one other variety of ovarian cyst, which I must notice briefly ; namely, that which contains hair, plates of bone, or fat, and in which even rudimentary teeth have been found, with or without any fluid being present. These tumors seldom obtain any large size, and may remain indolent for years ; on the other hand, they sometimes inflame, suppurate, and finally may cause death. These *dermoid* cysts, as they are termed, are a puzzle to pathologists ; the fact that they sometimes are found in very young children negatives the idea of their being the product of conception ; while it is equally difficult to admit, as some have suggested, that they may be the imperfect development of an ovum, which has been impregnated, but which by some accident has become enveloped in the tissue of another more advanced ovum ; in truth, however, this matter is as yet a complete mystery.

Having thus given you a brief outline of the pathology of ovarian tumors, I shall next call your attention to the consideration of what is of even greater importance to the practical physician, namely, their symptoms and diagnosis ; the latter a matter of often the greatest difficulty, an error in which may entail the most serious consequences, jeopardizing, and even sacrificing life itself.

First, I shall give you a brief outline of the two cases recently under treatment here :

One patient, Margaret McD., was unmarried, aged thirty. She stated that her health had been always good till about ten weeks previous to her admission, when, on recovering from a sharp feverish attack, the result of cold, she perceived that her clothes had become too tight for her, and since then she increased rapidly in size—so much so as to have become the

object of unjust suspicion; indeed, she subsequently stated that it was in consequence of the annoyance she experienced from it being reported that she was pregnant that she sought medical aid, coming for this purpose from a remote country district. Her general health was good; she complained only of thirst and of a frequent desire to micturate; her appetite was fair, menstruation normal, nutrition good.

She measured, on admission, 39 inches round the abdomen, at the umbilicus; fluctuation was distinct all over the abdomen, which was dull on percussion anteriorly from the pubes to about an inch above the umbilicus, but resonant in both flanks; the uterus was normal in size, shape, and position; the vagina was narrow, and the hymen perfect. She was low-spirited and desponding, and while absolutely refusing to consent to an operation, urged that something should be done for her. Therefore, with a view of gratifying this wish, I tapped her on the 6th April, and drew off 256 ozs. of a dark and somewhat gelatinous fluid. After the tapping the circumference of the abdomen was reduced to 29 inches. She subsequently suffered no inconvenience, and after a short stay in hospital was discharged. She returned again on the 8th June, when the circumference of the abdomen was 35 inches. From that date it continued steadily to increase till the 12th August, when she expressed her willingness to undergo any operation which would promise relief from her intolerable condition. Before the operation the diagnosis of a unilocular ovarian cyst, with but little solid matter, was made.

On the morning of the operation she had, at 6 A.M., a light breakfast, consisting of a cup of tea and a little dry toast; and at 8 A.M. an egg, beaten up with half an ounce of brandy, was given. The bowels were freed by means of an enema, and at 10 A.M. she was placed on the table, clothed in a flannel jacket, drawers, etc. Ether was the anæsthetic selected, which was

administered by means of Dr. Richardson's inhaler, which acted most satisfactorily. The patient was difficult to narcotize, and before she was thoroughly under the influence of the ether, vomited—the egg, taken quite two hours previously, being rejected undigested—a circumstance which deterred me from giving one on the next occasion. She vomited also three times during the progress of the operation, and several times subsequently. An incision, not quite five inches in length, was made in the median line; the cyst was without difficulty exposed; a sound passed round its surface proved it to be quite free from adhesions; Spencer Wells's trocar was then plunged into it, and the contents evacuated, without one drop of fluid escaping into the abdomen; the cyst was drawn out, some little difficulty being experienced in extracting the solid portion, which was of about the size of a man's fist; the pedicle was secured by means of Spencer Wells's clamp, and after being divided was seared with the actual cautery; the edges of the incision were then brought together with carbolized catgut sutures, and the abdomen supported in the usual manner, with broad strips of adhesive plaster and a flannel roller. The patient was then put to bed, no anodyne being given, nor *any stimulant administered*. The operation occupying, from the commencement of the incision till the wound was closed, in all about twenty-five minutes. At 11 A.M. the pulse was 88. She remained in a state of semi-unconsciousness till noon, when she woke up and spoke. Pulse 80. She vomited soon after. To have small pieces of ice at short intervals, and nothing else. 3 P.M.—Catheter passed; stomach sick, with retching subsequently; has dozed a good deal; to have nothing but ice. 11 P.M.—No sickness for some hours; to have a tablespoonful of soda water and milk iced every fifteen minutes, if not asleep, and ice *ad lib.* She recovered rapidly.

The second case was that of Mrs. M., aged twenty-eight,

married two years ; she had given birth to a child just twelve months previous to admission. Her labor had been easy, and convalescence good. Was attended by a midwife, who remarked, after delivery, that the abdomen was larger than it ought to be. She did not mind this at the time, but a few weeks subsequently observed that she "was greatly swelled," the whole abdomen being uniformly enlarged. A day or two after this she was attacked with pain in the right inguinal region. This subsided in four or five days, but ever after she suffered a good deal of pain at each menstrual period. These attacks of pain, however, did not confine her to bed.

From this time she steadily increased in size, the increase being sometimes so rapid as to be noticeable from day to day, at other times so gradual as to be almost imperceptible. Her health continued fairly good. She, however, lost flesh ; but were it not for the weight and inconvenience which her size caused, would not have sought medical aid.

On admission, though very thin, she was not emaciated ; her health was apparently good, and complexion clear ; she was very cheerful, and, without hesitation, at once expressed her readiness to undergo the operation of ovariectomy—the nature and risk of which were clearly explained to her and her husband.

The circumference of the abdomen was at this time, at the umbilicus, 34 inches ; from umbilicus to right anterior spinous process measured nine inches ; to left, nine and a half inches ; ensiform cartilage to pubes (symphysis), twelve inches. The abdominal walls being very thin, fluctuation was everywhere distinctly perceptible. There was dulness on percussion over front of abdomen to within three inches of ensiform cartilage ; both flanks resonant. The diagnosis of a unilocular ovarian cyst was made.

The operation was performed at 10 A.M., the bowels having

been freed by means of an aperient pill taken at night, and an enema administered in the morning. A light breakfast of tea and dry toast was given at 6 A.M., and a little beef tea at 8 o'clock. Ether was the anæsthetic selected, administered by means of Dr. Richardson's apparatus.

The incision, as in the former case, was commenced about an inch below the umbilicus, and was in the first instance about three and a half inches in length. The abdominal wall was so very thin that after the skin had been divided the greatest care was exercised. The need of this was soon manifested, for after the dissection had proceeded to but a limited depth, so thin and attenuated was the abdominal wall, and so intimately adherent and matted together were the subjacent structures, that it was impossible to say with certainty whether the peritoneum was laid open or not; layer after layer of thin tissue was carefully divided on a broad director, inserted with much difficulty under each layer, till at last I ascertained that I was thus dissecting the actual walls of the cyst itself, the whole anterior surface of which was intimately and inseparably attached to the abdominal wall.

Failing to separate the cyst from its attachment to the abdominal wall below the umbilicus, I enlarged the incision upwards to within an inch of the ensiform cartilage, hoping thus to reach the free edge of the cyst, but in vain. All attempts to separate the adhesions were fruitless, so dense and intimate were they, and at this juncture, in an effort to break them down forcibly, the cyst ruptured, and the contents rapidly evacuated through the rent, much of the fluid escaping into the abdominal cavity. A brief consultation was now held, and so desperate did the case appear that one of my colleagues strongly urged the abandonment of the operation. However, it was decided to make one more effort. I enlarged the opening into the cyst, and inserting my hand into it, reached the

bottom, and grasping the wall at its lowest point, succeeded in inverting the sac, drawing it through the opening I had made, and finally, with considerable difficulty, in breaking down from behind the dense adhesions which had before baffled me, and removing the entire cyst. The pedicle was now secured with a clamp, and, after being divided, seared with the actual cautery.

During the tedious and difficult processes described, very little blood was lost; a large quantity of the contents of the cyst had, however, escaped into the cavity of the abdomen; in fact, the pelvis was nearly full of it, and it was necessary to remove all of this by sponging. This occupied a long time, but was thoroughly accomplished; no fluid being left in the abdomen. The wound was then closed, as in the previous case, by means of catgut ligatures, but in consequence of the escape of the contents of the cyst into the abdominal cavity, I deemed it wise to insert a drainage-tube, bringing it out above the clamp, its free extremity being secured by adhesive plaster to the outside of the right thigh of the patient. The operation lasted one hour and twenty minutes. The patient vomited three times during the operation, and twice afterwards.

On being placed in bed, there was no appearance of collapse; the pulse was good, about 85; neither stimulant or opiate was administered, and she was allowed nothing whatever, except ice, for the first eight hours. During the whole day she was drowsy, dozing a good deal; the catheter was passed every fourth hour. 7 P.M.—Pulse, 104; temperature, 101.2°; complains of thirst; *a good deal of sanguineous discharge through the drainage-tube*; to have half an ounce of beef tea every second hour, and ice *ad lib.*

I shall not weary you with the details of the subsequent treatment of these cases, but merely state that her recovery too was excellent.

Although these two cases had the same favorable termination, they presented features very markedly different. In the first the tumor was not only of the simplest kind, but was free from adhesion, and was removed without the escape of one drop of fluid into the abdomen. In the second case the dense adhesions which existed anteriorly rendered the removal of the cyst by the ordinary method impossible, and it was only by inverting the sac, and breaking the adhesions down from behind, that this was finally accomplished. In consequence of the rupture of the cyst, the pelvis was filled with the fluid it had contained, and all this had to be removed by sponging, a process which occupied a long time; but notwithstanding these adverse circumstances, the patient made an excellent and rapid recovery.

In neither of these cases was any drug whatever administered, nor was any stimulant allowed; but, on the other hand, the greatest care was taken with regard to diet, ice alone being allowed for the first few hours, and subsequently beef tea and milk in very small quantities and at stated intervals. To this strict regimen, I believe, much of the favorable issue of these two cases was due. The greatest care was also taken to insure the best possible sanitary conditions, and no person was allowed to enter the ward subsequent to the operation, except the nurse who had charge of the case, and two pupils, who, *not resident* in the hospital, gave their whole time for the first few days to watch the patients.

The general symptoms which usher in ovarian disease, as you see from details of the foregoing cases, are very vague and uncertain. The patient may, and indeed probably does, complain of a considerable amount of discomfort in the ovarian region, before being conscious of any actual ailment, but, as a rule, the first thing that attracts her attention, is the discovery of a tumor, or at least a fulness, generally in one side of the

abdomen, which gradually increases in size. But often, even when it has reached a considerable size, the patient does not pay any attention to her state, or seek medical aid till the disease is far advanced.

In addition to the symptoms enumerated, there are often various others present referable to pressure on the neighboring viscera, such as irritation of the bladder, or interference with defecation ; but these are always vague, and valueless for the purpose of diagnosis. More definite and more important are the paroxysmal attacks of pain from which the patient not unfrequently suffers. These may be due to the tension of some of the folds of the peritoneum, but they are far more frequently caused by transitory attacks of local peritonitis, and, as a result, we often find intimate adhesions formed with the surrounding structures, especially with the omentum. Such adhesions add greatly to the difficulty, as well as to the risk, of operations undertaken for the extirpation of these tumors. In the vast majority of cases, however, the disease has advanced to a stage, in which either a well-defined tumor, or distinct fluctuation, or both, exist in the abdomen, before we are called on to give a diagnosis as to the nature of the disease from which the patient suffers. This was so in both the cases recently in this hospital—in both, large tumors existed for a long time prior to their seeking medical aid.

When this stage has been reached, the general health nearly invariably suffers to a greater or less degree. In the patient on whose case I am specially commenting, it was merely to the extent of loss of flesh, while in others there is great emaciation accompanied by dyspnœa, the result of the size of the tumor, also loss of appetite, and a long train of secondary symptoms. Menstruation may continue to be normally performed ; this was so in the patient whose case we are considering, but in many it becomes irregular as the disease progresses, or is alto-

gether suppressed. When the latter occurs, the patient, if she be married, naturally attributes the increased size of the abdomen to pregnancy, and even in unmarried women, as happened in the well-known case of a lady of rank, the unjust suspicion of pregnancy, and its attendant disgrace, has been attached to the sufferer; an injustice which the exercise of but a moderate amount of skill should have prevented.

The leading features of a case of ovarian cystic disease then, are these: we have a tumor of variable size, the gradual growth of which has generally been traced by the patient. The surface, in the case of the unilocular tumor, is smooth and even, while in the multilocular, the separate cysts impart a lobulated, irregular feel, to the hand passed over the abdomen. Fluctuation is generally distinct in the former, and can be felt everywhere over the surface. In the latter, this is only the case here and there, or it may be detected in but one situation, while we can also nearly invariably make out at some point, a firm hard mass, indicative of the existence of solid matter. The whole of the anterior surface of the abdomen is, in the case of either form of ovarian disease, dull on percussion, the intestines being forced back behind the tumor. A vaginal examination, which should be made in all cases, will prove whether the uterus is of its natural size and shape; frequently, however, that organ is displaced, being drawn upwards and anteflexed, but this is far from being invariably the case.

The conditions or affections with which cystic disease may be confounded are numerous. Ascites, especially if complicated with the existence of an enlarged spleen, tumors of the omentum, cancerous tumors in various situations, and extra-uterine foetation, have been mistaken for ovarian disease; but errors of diagnosis are specially liable to occur in cases of fibro-cystic disease of the uterus. Of twenty-three cases recorded by Mr. Clay, in which ovariectomy had been attempted, but in which

the operation was abandoned in consequence of the disease proving not to be ovarian, twelve were uterine ; in two no trace of a tumor whatever could be found.

While the enlargement of the abdomen from the presence of an ovarian tumor when menstruation is absent may easily give rise to the idea of pregnancy, it seems hardly possible that an unimpregnated uterus could be mistaken for an ovarian tumor ; yet this mistake has been made, and in order to guard against the recurrence of a similar error, you should invariably seek for the usual signs and symptoms of pregnancy, some, or all of which, will be sure to be present in a more or less marked degree. A careful vaginal examination will prove the uterus itself, and not the ovary, to be the seat of the enlargement. This is one of those cases in which the practice of ballottement may possibly be useful ; you must, however, always bear in mind, that pregnancy is not incompatible with the existence of disease of at least one ovary.

The diagnosis between ascites and ovarian dropsy, is not in general difficult. It is with the simple unilocular form that the question is most likely to arise. The history of the case often aids us materially in forming our opinion, for the patient is frequently able to tell you that the swelling commenced by the gradual enlargement of a small tumor, which, first felt in one or other iliac region, continued to increase till it extended across the abdomen, a history which would be incompatible with the idea of ascites. In ovarian dropsy also, there is almost invariably dulness on percussion over the whole front of the abdomen ; the very reverse of this occurs in ascites, for in that disease the intestines almost invariably float, and are consequently in contact with the anterior abdominal wall, therefore percussion yields a resonant sound. Fluctuation too in ascites is most clearly felt laterally, in the lumbar regions, that

being the point at which it is likely to be wanting in a case of ovarian dropsy.

I cannot, however, go further into these details, much less would it be possible, even if it were desirable, for me to enter on the consideration of the differential diagnosis between ovarian cystic disease and that of all the other affections with which it may possibly be confounded, and I must content myself with having laid before you the distinctive features of the former. Your other clinical teachers will explain to you those of the others, and you must weigh for yourselves the relative value to be assigned to each symptom, when called upon to decide as to the nature of the affection from which the patient suffers. But it is essential before passing from the subject of diagnosis, that I should point out to you the principal distinctive features which exist between ovarian disease and fibro-cystic degeneration of the uterus; first, because both diseases are strictly within the limits assigned to the gynæcologist; and secondly, because the latter is that which is specially liable to be mistaken for the former, and indeed so closely simulates it as sometimes to mislead the most careful observer.

I have in a previous lecture given you an outline of the leading features of fibro-cystic disease of the uterus, and I think I shall best aid you now, by throwing these into contrast with those of ovarian disease, so as to present them to you in a tabular view; premising, however, that there is not one of the symptoms enumerated which is not liable to great variation, and that therefore, the most extreme caution must be exercised in forming an opinion based on them. I should also add, that I am now speaking only with reference to tumors of considerable size and which extend entirely, or very nearly, across the whole abdomen.

OVARIAN CYSTIC DISEASE.

May occur at any age, but probably more frequent before the age of thirty-six than after it. Of 231 cases recorded by Mr. Clay, and of which the ages were known, 168 were under thirty-six, 68 of these were aged between seventeen and twenty-five years.

Previous history often throws light on the diagnosis, a tumor being frequently felt at first in one or other iliac region, which gradually extended across the abdomen.

Growth of tumor comparatively rapid.

Menstruation sometimes normal, but frequently irregular, and as the disease progresses is liable to be suppressed; profuse menstruation of rare occurrence.

Uterus of its normal size, frequently drawn upwards, so as to be difficult to reach, movable, unless bound down by adhesions and sometimes antelected.

Tumor becomes softer as it increases in size.

Urine voided without difficulty.

Generally health always suffers more or less, sometimes to a great degree.

UTERINE FIBRO-CYSTIC DISEASE.

Rarely met with in early life; of twenty-three cases recorded by Mr. Clay, in which the operation was abandoned in consequence of the disease being extra-ovarian, thirty-four was the age of the youngest patient.

Such a history unlikely to occur, growth usually more central.

Growth comparatively slow.

Menstruation profuse, if tumor be intramural or submucous, normal if subperitoneal.

Uterus elongated if tumor be in its substance or interior. Sound often passing for a considerable distance into its cavity; when tumor is rotated sound moves with it.

Time not likely to alter consistence of tumor.

Difficulty in passing water occasionally experienced from pressure on bladder and urethra.

General health does not suffer, unless menorrhagia be present.

If care be taken to weigh each of the distinctive features here enumerated, the risk of making a serious error in diagnosis will be greatly lessened. Above all, let me impress on you the necessity of using the uterine sound. It affords us the most important aid in forming our diagnosis. In the great majority of cases of large fibroids, whether solid or fibro-cystic, the uterus is either imbedded in, or so firmly attached to the tumor, that it cannot be moved independently of it; a point which can generally be ascertained, by inserting the finger into the rectum and keeping it there, while the sound previously passed into the uterus is rotated gently. And again the sound should be held steadily, while an assistant endeavors with both hands, to rotate the tumor itself. These are methods of manipulation which often enable us to decide whether the uterus is attached to the tumor or not.

Still even here error is possible; for, if a fibrous tumor spring from the uterus by a moderately long pedicle, or even by one as short as that shown in Fig. 21, p. 134, we may be able to move the uterus to such an extent as to lead to the conclusion that it is free; and on the other hand it is possible, that in a case of ovarian disease, the uterus might be so bound down by adhesions as to be immovable.

Some idea of the difficulty of diagnosing between fibrous tumors of the uterus when in a state of cystic degeneration, and ovarian cystic disease, may be gathered from the following case, recorded in volume xii of the *Transactions of the London Obstetrical Society*. The woman was aged thirty-six. An abdominal tumor had been discovered five years previously, which during the last six months had increased rapidly. On admission into hospital, a large tumor was felt which evidently contained no cyst large enough to warrant tapping, but which did not feel so hard as a fibrous tumor of the uterus; no vascular murmur was audible, and it appeared to move quite inde-

pendently of a uterus of normal size. When the tumor was exposed, it proved not to be ovarian ; it sprang from the upper part of the posterior surface of the fundus uteri by a short pedicle. The tumor was removed, and was found to weigh thirty-four ounces, and was seventeen inches in diameter. The patient subsequently died. The fact of the tumor growing almost from the very fundus of the uterus doubtless permitted that organ to have a greater amount of mobility than is usually met with in such cases, and when I add that the operator was Mr. Spencer Wells, you will agree with me that no means were omitted by that distinguished surgeon for arriving at a correct opinion as to the nature of the tumor.

LECTURE XV.

OVARIAN DISEASE (CONTINUED)—EFFECT OF ON DURATION OF LIFE—
OVARİOTOMY—STATISTICS OF—TAPPING OF CYST—INJECTION OF
CYST—CONGESTION AND INFLAMMATION OF OVARY.

WE shall now assume that after having carefully weighed all the symptoms, you have made up your mind that the case you have been called to see is one of ovarian disease; it still, however, remains for you to consider what its probable course will be, for on this point depends your future treatment. The most reliable data from which we can form an estimate as to the probable duration of life in the cases of cystic disease of the ovary, are those supplied from the tables of Mr. Stafford Lee. Of 123 cases tabulated by him, nearly a third died within a year, and rather more than one-half within two years from the date at which the first reliable symptoms of the disease were noticed, a duration hardly longer than that of cancer, while but seventeen lived for nine years or upwards; of these seventeen, one survived for fifty years. From these tables we may fairly assume that the duration of life in cases of the disease under consideration is unlikely on an average to exceed three or four years. As a rule, you may consider that the chance of life being prolonged, is in an inverse ratio to the rapidity of the growth of the tumor; for if this be rapid, the patient will speedily be worn out, and die exhausted no less by the effects of the disease, than by the distress caused by the

size of the tumor itself, even should no intercurrent attack carry her off after a brief illness.

The simple unilocular form seldom becomes dangerous to life, till the tumor, by its great size, interferes with respiration, and by its pressure impedes the abdominal viscera in the due performance of their functions. When this stage is reached, if, with the view of relieving the patient's sufferings, we have recourse to tapping, we may actually accelerate the fatal termination of the case, the drain on the system caused by the refilling of the sac, increasing the previously existing exhaustion. The rupture of a cyst is another possible cause of death, but it certainly is not of very frequent occurrence.

In all cases of ovarian disease, there is a great proneness to inflammation of the abdominal, and even of the thoracic viscera, and an attack which would in others be of no importance, becomes, when occurring in the patient suffering from ovarian dropsy, a very serious matter, and therefore not a few die of diseases not directly connected with the original malady, but which is not on that account the less chargeable with the result.

The certain and speedy death, which in the great majority of cases awaits the sufferer from ovarian disease, has decided surgeons to attempt its cure by the extirpation of the diseased organ; the question, then, which in each case has to be decided is, will the patient if left alone, have a fair chance of being one of the fortunate twelve who, out of every 100, may be expected to live for ten years or upward, or one of the eighty-eight who, if not operated on, must in a third of that time be consigned to their graves? In deciding on this momentous question, we should never for one moment lose sight of the fact, that there are but two possible terminations to operations for the extirpation of ovarian tumors, the one being perfect recovery, the other speedy death.

The most important element in the calculation undoubtedly

is, the rapidity with which the tumor is increasing in size; for if this be rapid, the case must soon terminate fatally. Thus, in one of the cases I am alluding to, the circumference of the abdomen increased four and a half inches in one month. This patient we may say with almost positive certainty, would have died under any circumstances in a very brief period, and therefore the operation was called for; but if the increase be very slow, we should hesitate before sanctioning it. Again, the state of the patient's health will materially influence your judgment; if it be fairly good, and that she seems to suffer only from the ordinary effects caused by the presence of a large tumor in the abdomen, she will be in the most favorable state for the operation. Of course, if the patient be laboring under any other form of organic disease likely to terminate fatally in a short time, ovariectomy is hardly justifiable; it would, however, be impossible to lay down an exact rule on this point.

The presence of firm and extensive adhesions between the tumor and intestines or other abdominal viscera greatly increase the risk of a fatal termination; but the diagnosis of adhesions is very difficult, in some cases impossible to make. By grasping the integuments over the most prominent parts of the tumor and raising them up, and by endeavoring by careful manipulation to make them glide over its surface, a fair estimate may be formed as to whether they exist anteriorly or not; but we have no means of ascertaining what may be the condition of the tumor posteriorly, and are therefore to a great degree necessarily in ignorance on this point. The repeated occurrence of attacks of sharp pain are, however, of importance; if the patient has not suffered much from these, extensive adhesions are not likely to be met with; but if paroxysms of pain have been frequently experienced, we may with confidence anticipate that they have formed.

The simpler the tumor the greater chance there exists of a

favorable termination, and the larger amount of solid material the less hopeful is the case. You may take it as a general rule, that the further the tumor departs from the true cystic type, the more unfavorable the prognosis becomes. I am always unwilling to sanction the operation of ovariectomy where the tumor is evidently nearly solid.

But even under the most favorable circumstances the mortality in cases of ovariectomy is great; in the tables of results appended to the edition of Kiwisch's work *On Diseases of the Ovaries*, translated by Mr. Clay, of Birmingham, himself a successful operator, the results of 537 cases are recorded, 212 as successful, and 183 as terminating fatally, which may be considered as implying that fifty-three per cent. recovered, and forty-seven per cent. died; but in the large number of 142 cases the operation had to be abandoned, either from the adhesions being too intimate to permit of the tumor being removed, from the disease being discovered to be extra-ovarian, or from partial excision only having been effected. Of these, fifty-five died, and this number must, in order to make the estimate as nearly as possible accurate, be added to the 183 fatal cases already mentioned. We are then to deduct from the 537 recorded cases, 87 in which the operation was commenced but not carried out, but who nevertheless survived; this leaves 450 to be accounted for; of these, 212 were perfectly successful, and 238 terminated fatally; showing that nearly fifty-five per cent. of the cases operated upon resulted unfavorably.

But though I quote these statistics and have analyzed them for you, you must not accept them as being a fair index of the results of the operation at the present time, for the mortality has steadily decreased during the twelve years which have elapsed since these tables were published. The errors in diagnosis are now comparatively few, cases unsuitable for operation are rejected, while it is becoming rare to hear of the opera-

tion having to be abandoned. Still, making every allowance for improved diagnosis, and for greater care in the selection of cases, I do not think we can hope to raise the percentage of recoveries permanently above sixty-five per cent. I am aware that a higher estimate than this of the success of the operation is made by others. Thus, Dr. Graily Hewitt states that the recoveries are now from sixty-five to seventy-five per cent.; perhaps this may be true if errors in diagnosis be omitted, but this I consider it would be wrong to do. The results of Mr. Spencer Wells's fourth series of one hundred cases of ovariectomy are still more favorable. Of 100 cases in which the operation was completed, seventy-eight recovered, twenty-two died, and thirteen other cases in which the operation was commenced but not completed, or exploratory incisions only made, seven recovered, and six died. He shows that the mortality after ovariectomy is in his practice steadily diminishing; of his first 100 cases, thirty-four died; of his second 100, twenty-eight died; of his third 100, twenty-three died; of his fourth 100, twenty-two died. In his private practice he has of late lost but fourteen per cent. This is, indeed, as it was termed by Dr. West, "a splendid success;" still I cannot but feel that no small portion of this success is due not only to the dexterity of the operator, but to the skill which he has exhibited in selecting suitable and rejecting unsuitable cases, a dexterity and skill which all cannot hope to attain, and I fear that the average of all of the operations undertaken in Great Britain, will still show a considerably higher mortality than that here recorded. I am far from wishing to discourage the operation in suitable cases, and am strongly of opinion that if greater discrimination in selection be used, if the operation be performed earlier, and in patients free from symptoms of other diseases, that the results will be still more favorable, nor do I wish to overlook the fact, that even if only sixty-five per cent. of our operations

prove successful, we restore to health more than fifty women out of each 100 cases, who would have died in about three years, and this, after allowing for the full proportion who if not treated at all would have lived for a comparatively long period.

I have hitherto spoken only of excision of the diseased ovary, an operation which though long known, has only been extensively practiced within the last few years; but tapping the cyst has been frequently performed, both as a palliative measure and also as a first step towards a radical cure. With the former view it is practiced whenever the distension of the abdomen is so great as to interfere with respiration. Under such circumstances it is always justifiable, but it is often productive of but very temporary relief, and sometimes only aggravates the patient's condition, for if the cyst fills rapidly again as it generally does, the secretion of such a large quantity of fluid further weakens the already debilitated patient, and moreover tapping is sometimes followed by the rapid growth of other cysts which seem to have lain quiescent previously, their development having been apparently retarded by the pressure exercised on them by the fluid. Inflammation too may supervene and terminate fatally, and lastly, bleeding of an alarming character has been known to occur, occasioned, by the trocar wounding a large vessel. This may take place either into the cyst or into the abdominal cavity; but even where no accident occurs, alarming prostration, and vomiting, have followed on the evacuation of the cyst, and in not a few cases fatal peritonitis has ensued; so that the operation, simple as it is, is not free from danger. According to Kiwisch, of 130 cases of tapping, twenty-two died in a few hours or days, twenty-five more died within six months, and he concludes by stating his conviction, that all these 130 patients had their lives shortened by the operation.

There have been cases no doubt recorded in which after tapping, the cyst has shrivelled up and a permanent cure resulted, but they have been of such very rare occurrence as to hold out little inducement to us to follow the practice. Indeed I am not inclined to advise you to perform the operation of tapping except when compelled to do so as a palliative measure.

Dr. West advises that the operation of ovariectomy should not be performed till the cyst has been tapped. I cannot, however, concur with him on this point, but I admit that when the cyst is emptied and during the process of refilling, its relations to the surrounding parts can be more readily made out, and also that the presence or absence of adhesions may perhaps be ascertained. Tapping also informs us whether the contents of the cyst be viscid or aqueous, whether the tumor be unilocular or multilocular, and may perhaps enable us to decide what amount of solid matter is present. In obscure cases therefore, it is advisable to tap for the purpose of aiding us in forming our diagnosis.

When for any reason you decide on tapping an ovarian cyst, I recommend you to have your patient in bed, and to let her lie on her right side, the abdomen being brought well over the edge of the bed. It is advisable to have a bandage round the patient, as is usual for tapping for ascites, which is to be gradually, but not unduly, tightened as the cyst is emptied. It is better to use a moderately large trocar. It is usual also to have an india-rubber tube attached to the canula, as suggested by Mr. Spencer Wells, through which the fluid escapes into a vessel placed to receive it; should, however, the contents of the sac be viscid, this adds to the difficulty of its escape. If the canula becomes plugged, it will be necessary to pass a flexible catheter through it for the purpose of clearing the instrument, a matter sometimes of some difficulty. After a cyst

has been emptied a moderately tight bandage should be kept round the abdomen and perfect rest enjoined for some days.

Tapping, when performed with a view to a radical cure, is only preliminary to injecting the cyst with some stimulating fluid—iodine being that usually preferred; the chief objection to the practice is, that it is only suitable to cases in which the cyst is single, for if the tumor be multilocular no benefit is likely to follow. The results are under any circumstances very uncertain, sometimes none whatever have followed, while in others the effects were most marked—prostration, vomiting, and inflammatory symptoms—occasionally resulting in a cure of the disease, but sometimes terminating in death. The operation from its uncertain and sometimes fatal results is now seldom performed. I have not had any personal experience of it.

You must have inferred from what I have said that medical treatment is useless in cases of ovarian dropsy, excepting so far as the judicious administration of tonics is concerned, and I trust none of you will ever be guilty of the folly, to use no harsher expression, of salivating or blistering any patient you may meet with who is suffering from this disease.

I have hitherto spoken only of cystic disease of the ovaries, because it is by far the most common as well as most important form of disease to which these organs are liable; but solid tumors of the ovary are also occasionally met with. I have never seen an example of this form of disease. Cancer too may attack these glands. I need hardly add that when this occurs the case is beyond the reach of treatment.

In addition to these affections which involve change in structure, the ovary may be attacked by inflammation. Acute ovaritis is very rare, but chronic inflammation, or at least congestion of the organ, is common enough. To this cause we may probably attribute the pain, which in so many cases is ex-

perienced over the seat of the left ovary, and which is so invariably present in women suffering from many forms of uterine disease. This pain, which is aggravated at each menstrual period, generally shoots down along the inside of the thigh; in severe cases nausea is sometimes complained of, and even vomiting may be present. The left ovary is the one by far the most frequently engaged; why this should be so, I am quite unable to say, but it is a notable fact which probably you have all observed. Menstruation is occasionally affected, sometimes becoming scanty and attended with pain, but on the other hand I am satisfied that a condition of ovarian irritation short of actual inflammation, but in which there is probably a certain amount of congestion present, is not an infrequent cause of menorrhagia. If from the occurrence of the symptoms enumerated you come to the conclusion that inflammation or congestion of the ovary exists, you will best relieve that condition by the application of a few leeches over the seat of the pain, or at the verge of the anus, by the exhibition of mild cathartics, and of full doses of the bromides of ammonium or potassium, and subsequently by blistering. We had a good example of chronic inflammation of the ovary in a young woman recently in the medical ward, whose prominent symptom was vomiting. I shall have to refer to her case again; at present I can only add that after the application of three or four leeches, the vomiting, which had been persistent for weeks, was temporarily checked.

You must not, however, suppose that every case of pain in the ovarian region is necessarily due to inflammation; in by far the majority of these cases it is merely sympathetic, and is kept up by the existence of some uterine ailment.

Subacute inflammation of the ovary is not of itself likely to be serious, but the constant pain which the patient suffers is very wearing, and exposure to cold and many other causes,

may at any time aggravate it, and cause serious symptoms to arise from the inflammation extending to the peritoneum. The affection should therefore never be looked upon as being of no importance.

In many cases of left side pain depending on ovarian congestion, or irritation, I have found great benefit follow the inunction twice a day over the affected part, of an ointment composed of equal parts of the veratria and of the iodide of potassium ointments, to which, in some cases, I add a smaller proportion of the unguentum cantharidis.

LECTURE XVI.

UTERINE THERAPEUTICS—EXTERNAL APPLICATIONS—HOT AND COLD
HIP-BATHS—USE OF CHAPMAN'S SPINAL HOT WATER AND ICE BAGS
—WET BANDAGES—BLISTERS—IODINE.

IN previous lectures I have called attention to the most prominent features of those forms of uterine disease, which from time to time we have met with examples of; and in doing so, I have alluded to the treatment which I considered most suitable in each case. I think, however, I shall be doing you some service if I now devote one or two lectures to the consideration in greater detail of what may be termed *Uterine Therapeutics*; a term which I must use in a very extended sense, so as to include not only medicines administered internally, but also the medicinal agents employed in the treatment of the diseases we have had under consideration, and the means by which these remedies should be applied. I know from my personal experience, that not a few even of those actually engaged in practice are still so imperfectly acquainted with this subject, that if called upon to give directions to patients suffering from uterine diseases as to the manner of carrying out the treatment prescribed, they will either be altogether unable to do so, or will direct its employment in an inefficient manner.

In considering the subject of the treatment of uterine disease, I shall direct your attention, first, to applications to the surface of the body; secondly, to those made directly to the vagina, os uteri, or interior of the uterus; and, thirdly, to those

administered by the mouth or rectum, or by hypodermic injection.

Of external agents, none are of greater value, if judiciously employed, than baths. I am convinced, however, that much injury has been done to patients by directing them to use either hot or cold baths, in a mere empirical fashion, and without duly weighing the effects they are likely to produce. I do not now mean to enter into the merits of sea-bathing, or of the ordinary tepid or hot bath, in which the whole body is immersed, but only of the cold and warm hip-bath, which, if judiciously employed, is frequently specially useful in the treatment of uterine disease.

There exists a very strong popular prejudice in favor of the various forms of hot baths as a means of inducing menstruation, if that function be suppressed or imperfectly performed; a prejudice not confined alone to females, but largely shared, and indeed encouraged, by many medical men. The common practice adopted in cases where menstruation is suppressed, or where the discharge, if appearing at all is scanty, is to immerse the feet, legs, and sometimes the pelvis in warm water, or mustard and water; a practice seldom followed by the intended results, but often on the contrary, proving decidedly injurious. I can confidently advise you frequently to adopt in such cases a directly opposite line of treatment; namely, to direct your patient to sit in a bath containing cold water of a depth sufficient to cover the pelvis, the legs and feet not being immersed in it, but kept warm, by being wrapped in flannel, or by being plunged in a foot-pan full of hot water, care being also taken to keep the shoulders covered. The temperature of the water in the bath, and the length of time during which the patient should be directed to sit in it, must vary in each case. The water should not be too cold. A temperature of about 60° is probably the best. The bath should be taken at bedtime, and

the patient should sit in it each night for a period, gradually increased if she can bear it, of from five to fifteen minutes. In summer obviously it can be borne longer than in winter. On leaving the bath, she should be well rubbed with a coarse towel or sheet, and put instantly into bed. If chilly, a hot jar should be applied to the feet; should the patient, however, feel uncomfortable or chilly after the bath, either it should not be repeated, or the immersion should be for a much shorter time. Let me point out to you as an example a case recently treated here in this manner. A. M., æt. twenty-five, unmarried, a servant, much confined to the house by her employment, had of late suffered greatly from headache, pain in the back, loss of appetite, and constipation. For months past the menstrual flow had become gradually more and more scanty, till finally it ceased to appear altogether. There was not any symptom of constitutional disease, nor of local congestion or inflammation. The bowels being constipated, she was ordered pills containing aloes in combination with iron. This sufficed to keep the bowels open, but the headache continued, and there was not any appearance of a return of the menstrual discharge. Strychnia was prescribed, still no improvement resulted. She was now directed to sit each night in cold water in the manner described, for ten days before the date at which the flow was expected, and as a result we had the satisfaction of finding the catamenia reappear, very scantily at first, it is true, but still in sufficient quantity to afford satisfactory proof that the treatment was telling. The same course was adopted at the approach of the next menstrual period, and on that occasion the flow was much more profuse, and indeed in all respects more nearly normal than it had been for years, the patient's general health also improving in a marked degree.

Bear in mind, however, that the cold hip-bath is not applicable to all cases in which amenorrhœa is a prominent symp-

tom. You should never employ it in any case in which you have reason to suspect the existence of constitutional disease; or in patients of a very feeble anæmic habit; but if you are careful in selecting fit cases, I can safely recommend your imitation of the practice you have seen carried out in the case I have just drawn your attention to.

The warm hip-bath is a not less valuable agent than the cold one, and is, moreover, capable of being used with advantage in a greater variety of cases. You have seen me repeatedly employ it in the treatment of patients suffering from endometritis. It is also useful in many cases of dysmenorrhœa as an adjunct to other treatment.

As in the case of the cold hip-bath, I recommend you to direct the warm bath to be taken at bedtime. The temperature should not be high, not more than three or four degrees above that of the body, care being taken that it does not fall below that fixed upon during the whole period of immersion, which should be for about fifteen or twenty minutes. In cases of endometritis, where much pain exists, I am in the habit of directing these baths to be taken every night for weeks together, except during the continuance of the menstrual flow. When, however, they are employed with the view of relieving painful menstruation, they need only be taken for eight or ten days preceding the period. In these cases, too, I find that a somewhat higher temperature (about 105°) is needed.

We have yet another mode of employing heat and cold externally in the treatment of uterine disease; namely, by means of Chapman's spinal bags. This is a method of very great value in the employment of these agents, and has besides the advantage of permitting their use without much trouble or serious inconvenience to the patient; for while the bath can only be employed with advantage at bedtime, the spinal bag

can be applied with facility at any hour in the day, and can be worn, if necessary, when the patient is dressed.

I have for some years past employed the spinal hot water bag—1st, in the treatment of menorrhagia; 2d, for the relief of pelvic distress arising in course of uterine or ovarian disease; 3d, in some cases of dysmenorrhœa. I do not advise you to rely exclusively on the use of the hot-water bag in cases of menorrhagia; or to suspend other treatment while you employ it, but to use it in conjunction with such additional remedies as you may deem fit. But this I can promise you, after very prolonged and careful observation, that in many cases of profuse menstruation, especially in patients of relaxed muscular tissue, or in those suffering from the effects of imperfect involution of the uterus after delivery, you will often succeed in restraining for the time the excessive loss, by applying to the lumbar vertebræ a ten-inch Chapman's spinal bag, filled with water at a temperature of about 105° Fahr., and this when other means have failed. The size I have just named is the best for the purpose, and the bag should be worn for not less than two hours at a time. Chapman's bags are far superior to the ordinary hot-water ones, from the use of which I have not derived any satisfactory result.

Great benefit also follows the use of the hot-water bag in cases of pain depending on the existence of almost any of the ordinary forms of uterine disease. Few patients labor under any of these affections without suffering from pain in the back, above the pubes, over one or other of the ovaries, or along the margin of the false ribs; and there are indeed few of these sufferers who do not derive relief from the judicious use of the hot-water spinal bag. Indeed, I have often wondered that it is ordered so rarely. In like manner in cases of dysmenorrhœa, especially if they are of inflammatory or congestive origin, marked relief from present suffering often follows the

wearing of the hot-water spinal bag for two hours at a time at intervals through the day. I say present relief, for I do not think its action exerted any permanent effects on any of the cases in which I have employed it.

At present there are two cases in the hospital in which I have practiced this treatment. One is that of Mrs. R——; she has a large intramural fibroid, and suffers much from pain above the pubes shooting down the inside of the thighs; this is specially severe just before the occurrence of each menstrual period. Her case is not one favorable for operation; she has derived the greatest relief from the hot-water spinal bag, and its use has also decidedly lessened the flow at the catamenial periods, which usually is very profuse. The other patient, Mrs. D——, was admitted last week in a very anæmic condition. She has been drained by uterine hæmorrhage, which had lasted continuously for three weeks. So extreme is her debility, that I have not as yet ventured to dilate the cervix, as is necessary to enable us to ascertain with certainty the cause of this dreadful loss; I believe it will prove to depend on a granular condition of the intra-uterine mucous membrane. In her case the application of the hot-water bag was at once followed by a diminution of the discharge, and time was thus afforded for the remedies administered internally to act. Previous to its use she had taken ergot, iron, and quinine in full doses without effect.

The treatment of uterine diseases by the application of cold to the spine, as best effected by means of Chapman's ice-bags, requires to be carried out with greater caution than that by means of the spinal hot-water bag. The latter, injudiciously applied, may be altogether useless, or even aggravate suffering, but is not likely to be injurious. The ice-bag, however, may, without doubt, if used in unsuitable cases, prove decidedly so. I have found the ice-bag useful—1st, in certain cases of

amenorrhœa in which the cold hip-bath was not suitable; 2d, in relieving the sickness of pregnancy; 3d, in certain forms of disease in which severe pelvic and lumbar pains were experienced, together with and apparently depending on the condition known as spinal irritation.

Some females of feeble constitution are quite unfit for the prolonged immersion in cold water required for carrying out the treatment just recommended in certain forms of amenorrhœa; in such cases Chapman's spinal ice-bag may oftentimes be applied with advantage over the sacrum and lower lumbar spines. In the first instance it should not be used for more than fifteen minutes at a time. If well borne its application should be prolonged; but I consider it better to carry out this treatment by repeated applications of the ice-bag, made at intervals of some hours, than by prolonged application made once or twice a day.

The same observations apply to this mode of treatment when practiced with the view of relieving the pain which, though referred to the uterus or ovary, appears to depend on spinal irritation.

Without doubt the application of cold to the spine has sometimes a marked effect in lessening the distressing sickness experienced during pregnancy. Doubtless, too, it is a remedy which frequently fails to effect good; but it is nevertheless a valuable one; let me, however, urge on you the necessity of caution, for I am by no means sure that it is not capable of producing abortion. There is one other method of relieving the suffering so constantly experienced in cases of uterine disease by external means, which it is well to bear in mind, and which I urge on you not to despise because of its simplicity, or because it is recommended by a class of men whose practice is not in general worthy of imitation. I allude to the wet abdominal bandage. It is usually applied by dipping one-

third of a calico bandage three yards long and half a yard wide in water ; the wet end is applied around the pelvis and the dry part rolled outside it so as to prevent the patient's sheets, or if worn in the daytime, as it can easily be, her clothes, from being wet. This is specially useful in allaying pains depending on ovarian congestion or irritation, and, indeed, is beneficial in all cases of uterine disease. My colleague, Dr. James Little, recommends the use of these bandages for the relief of habitual constipation, and it is a mode of treating this common and most troublesome affection well worthy of a trial. In such cases you must direct the bandage to be applied every night for a considerable time.

Blisters are of great value in the treatment of many forms of uterine disease, especially in cases of chronic metritis or endometritis, where the uterine walls having become thickened and indurated no relief from suffering follows local bloodletting, whether practiced by leeching or puncturing. In my opinion, blisters prove most useful when applied frequently, at intervals of a few days ; they should be of small size, about the circumference of a crown piece. I generally direct them to be placed alternately over the sacrum and above the pubes, or over the ovary if that be the chief seat of pain. The application of iodine is in some cases preferable to the use of blisters. It does not weaken the patient as blisters often do, and should therefore be employed with patients who may be in a debilitated condition. To produce any beneficial effects, its use must be continued for many weeks, and as the repeated application to the same spot of either the tincture or liniment of iodine, especially the latter, is apt to produce much irritation, it is best to direct the iodine to be rubbed in over a limited space only, and when that spot becomes tender to apply it in a similar way to an adjoining part, so that without causing the patient much suffering the treatment may be carried on

continuously. To relieve the distressing backache so commonly present in these affections, you may sometimes employ with benefit a liniment composed of ten drachms of the compound camphor liniment with three of the tincture of aconite and three of chloroform, or an ointment composed of equal parts of veratria and iodide of potash ointments. This well rubbed in over the seat of pain often produces very satisfactory results. But you will soon discover that all remedies applied to the surface of the body seldom effect more than transitory good. To effect a cure, your remedies must be applied directly to the diseased parts. In my next lecture I shall call your attention to these means.

LECTURE XVII.

UTERINE THERAPEUTICS (CONTINUED)—APPLICATIONS TO THE VAGINA AND UTERUS—VAGINAL INJECTIONS—INTRA-UTERINE APPLICATIONS—MEDICINAL TREATMENT.

IN my last lecture I directed your attention to those agents in the treatment of uterine and ovarian disease, which are found useful when applied to the cutaneous surface of the body; to-day I shall speak of that still more important class which are applied directly to the vagina and uterus. Of these, lotions injected into the vagina are the commonest.

Syringing the vagina with water, or with medicated fluids is an old and popular remedy for nearly every form of uterine disease, and is one which, though often of great value if properly performed and practiced in suitable cases, is as often utterly useless, and occasionally positively injurious. Thus, an elastic enema-bag, capable of holding from six to ten ounces, is commonly employed for the purpose: such an instrument is quite unsuitable. But occasionally a worse, because a positively dangerous instrument, is employed; namely, a glass syringe, the end of which is perforated with five or six holes. Not long since I was requested to see a woman to whom such a syringe had been supplied. The glass being thin, the instrument broke in the vagina, and several pieces of broken glass remained in that canal, causing intense pain to the patient. By slowly and carefully introducing a Ferguson's speculum, I was enabled to extract through it the frag-

ments of the syringe, and no serious consequences happily followed.

Any syringe employed for the purpose of vaginal injections should be one capable of throwing up a continuous stream. Such syringes are commonly known as the "syphon syringe," or "Higginson's syringe."

When using the syringe the patient should, if possible, lie on her back, the hip resting on a bed-pan which receives the fluid as it escapes from the vagina; but the majority of women object to this plan, as it necessitates the presence of an assistant, and you are then obliged to permit the patient to inject the fluid from a vessel placed in front of her, or in a foot-pan or bath over which she sits. This is a very inefficient method, for the fluid escapes from the vagina too rapidly, and does not distend that canal, as it is desirable it should. In cases where there is not any urgent reason for the use of medicated lotions, it is often a good plan to direct the patient to use her syringe while sitting in a warm hip-bath. I have found this method very efficacious in allaying vaginal irritation.

But very few patients can continue to use any of the ordinary syphon syringes for more than a few minutes at a time without fatigue; consequently, where it is our intention to inject a stream of water into the vagina for a length of time other means must be adopted.

The use of hot-water vaginal injections, of a temperature of from 98° to 110° according to the nature of the case, are strongly advocated by Dr. Emmet, of New York; and there is no doubt but that, when properly administered, they are in many cases a very efficacious and valuable remedy; but to carry out this treatment aright four things are necessary:

1st. The quantity of hot water used on each occasion should be large;

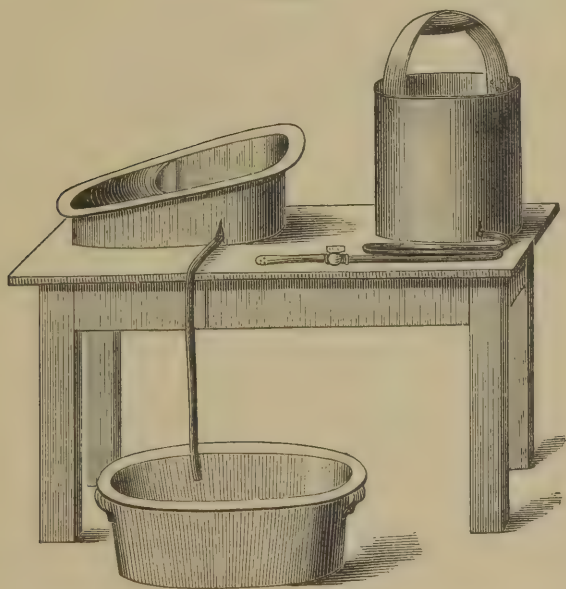
2d. The temperature of the water should be kept up to an even standard;

3d. The stream should be continuous;

4th. The patient should lie in such a position as will permit some of the water to remain in the vagina, and consequently keep that canal more or less distended.

To effect these objects I employ a very simple apparatus (Fig. 33).^{*} It consists of a tin or zinc vessel, similar to that

FIG. 33.



Apparatus for Vaginal Injections.

used for purposes of irrigation by surgeons, and capable of holding not less than two gallons. At the side of this can,

^{*} Made by Fletcher & Phillipson, 10 Lower Baggot Street, Dublin.

near the bottom, an india-rubber tube, six or eight feet in length, is attached, the free end of which is furnished with a stop-cock, and fitted with an ordinary gum-elastic vaginal tube about a foot in length. The other part of this apparatus consists of a bed-pan, also made of zinc or tin, somewhat similar in shape to the slipper bed-pan in common use, with an india-rubber tube affixed to a point near its bottom. The bed-pan should be at least six inches high in front, sloping gradually back to about two behind, the posterior third should be covered in and slightly hollowed, so as to allow the patient to lie on it without discomfort. In using this apparatus, the patient should lie on a hard couch, or better still, on a table, upon which a mattress, if necessary, can be spread. The precaution of requiring the patient when using this arrangement to lie on a hard couch is essential, for if the pan be placed on anything yielding, such as a sofa or ordinary bed, the patient's weight will sink it below the level of the surface, and consequently the water will not be carried off by the tube, but will overflow. The vessel containing the water should then be elevated some feet above the level of the couch on which the patient lies, which can be done either by placing it on some article of furniture of sufficient height, or by hanging it from the wall. The extremity of the tube attached to the bed-pan being placed in any convenient vessel, the arrangement is complete. Any one can be taught how to regulate the temperature of the water, and to replenish the vessel containing it, if that be necessary, while the patient herself can easily control its flow by means of the stop-cock affixed to the end of the vaginal tube; while the tube attached to the bed-pan carries off the water as it flows into it from the vagina, and thus obviates the necessity for repeatedly interrupting the douche by having to empty the pan, which would otherwise arise, thereby also greatly enhancing

the patient's comfort. Vaginal injections can, by this simple and cheap apparatus, be used with very little trouble.

Having thus pointed out the method of syringing the vagina, it is further important that you should consider the temperature of the fluid to be injected, the medicinal agents to be so employed, and their strength.

As a rule, I recommend you not to inject any perfectly cold fluid into the vagina; doubtless perfectly cold water is a more tonic application, if I may use that expression, than warm could be; but the object of injections generally is to allay irritation, and not to give tone to the vaginal walls; that will soon follow as a result if you remove the local affection. Besides, I have seen very unpleasant and even serious consequences follow the injection of cold water into the vagina. Thus severe uterine colic, and intense pain above the pubes occurred as an immediate result in one case; and in another so grave were the symptoms that life was endangered from an attack of pelvic cellulitis which followed the injection into the vagina of cold water, ordered with the view of checking profuse menstruation. I recommend you, then, to direct that the fluid employed be used at about blood heat, and when vaginitis is present, at even a higher temperature.

The medicinal agents employed for vaginal injections are very numerous. I, however, restrict myself to a few. I have so frequently found that solutions of alum and of the sulphate of zinc aggravate the patient's sufferings when vaginitis was present, that I do not, in such cases, now employ either. They coagulate the albumen which enters so largely into the composition of leucorrhœal discharges, and, if you examine a patient any time within twenty-four hours after she has used an alum injection, you will find a number of hard masses in the vagina, formed by the coagulation of the discharge, which often cause much discomfort. Borax is a better agent; but it too, some-

times causes irritation, though in a less degree. A drachm of borax to the pint of water is the strength I usually direct to be used.

Where the object is to soothe and to allay irritation, an infusion of tobacco is an excellent remedy. Tobacco must, however, be used with caution. Some patients are peculiarly susceptible to its action; especially those in whom the orifice of the vagina being narrow, some of the fluid is retained in the canal. Begin, therefore, by infusing fifteen grains of the unmanufactured leaf in a pint of boiling water. If this produces no unpleasant effect, increase the strength to thirty, or even sixty grains to the pint. In many cases the addition of a drachm of borax to each pint of the infusion greatly increases the efficacy of the treatment. Many patients, however, are unable to use the tobacco at all, as even a very weak infusion causes nausea and faintness. When this is the case, or where you fear to run the risk of causing any discomfort to the patient, I recommend you to substitute for tobacco an infusion of hops, directing an ounce of the latter to be infused in a pint of boiling water, with or without the addition of borax, as you may deem advisable.

Cases are, however, frequently met with where no vaginal inflammation or even irritation exists, but where a profuse and weakening leucorrhœal discharge is constantly being poured out, which it is necessary to check; here astringents, such as alum or zinc, in the proportion of sixty grains to the pint of tepid water, often prove most useful. Should they irritate, you will frequently find the decoction of oak bark serviceable. Warn your patient, however, that the decoction of oak bark stains linen, for ladies will not be pleased to find their under-clothing or towels covered with ugly stains. This reminds me to give you a similar caution respecting the use of the solution of nitrate of silver. A few years ago this was almost the only

remedy employed in the treatment of uterine disease. I can with confidence say that as an application in cases of disease of the body of the uterus or of the cervix, it is nearly useless. In cases of vaginitis it may be employed with advantage. It must be applied through a speculum, the surface of the vagina being brushed over with a solution containing twenty or thirty grains of the salt to an ounce of water. The application may be repeated at intervals of two or three days. I now seldom employ the solution of nitrate of silver, as I look on its use in the majority of cases as a mistake, and I believe I can obtain better results by other means.

Of all the agents which are applied to the vagina for the relief of inflammation or congestion of that canal, glycerin, without doubt, is one of the most valuable. A small roll of cotton-wool will absorb five or six drachms of glycerin; you fasten to this a strong thread or piece of twine, introduce it through a speculum, and leave it in the vagina for twelve or even twenty-four hours, directing your patient to withdraw it at the expiration of that time by means of the string which is left hanging outside the vulva. Glycerin thus applied produces a copious watery discharge, which has a marked effect on the mucous surfaces in immediate contact with it. Thus, after its application the vagina and vaginal aspect of the cervix uteri appear pale, and the copious discharge seldom fails to relieve, for the time at least, that distressing sense of heat which is complained of in severe cases of vaginitis. In less acute cases the addition of ten grains of tannic acid to the ounce of glycerin often proves useful, but if used before the acute symptoms subside, it may cause increased irritation. Be sure whenever you use glycerin to warn your patient that she is to expect a copious discharge, otherwise the great flow which often comes on almost immediately will cause much alarm.

Medicated vaginal pessaries, containing a variety of medical

agents, such as iodide of lead, mercury, tannin, belladonna, etc., are in common use. I can only say that I have never found them of real service, and consequently do not now employ them. But many drugs may be administered with great advantage per anum in the shape of suppositories; this specially holds good with respect to iodoform. In many painful affections, such as in some cases of fibroid tumors of the uterus, in which the sufferings are severe, five grains of iodoform in a suppository introduced into the rectum gives great relief, and may with advantage be substituted for opium. It seems to act by relieving muscular spasm.

Numerous medical agents are now employed in the treatment of disease of the cavity of the uterus. These may be used in the form of fluids, of solids, or of ointments. I mention them in what I consider to be the order of their value.

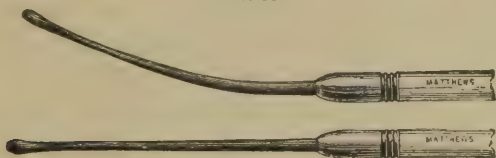
With respect to fluids I give you one caution: do not inject them into the uterus. Such a method is fraught with great danger, and except that it is generally easy of execution, possesses no advantage.

The fluids most commonly employed in the treatment of intra-uterine diseases, are a saturated solution of carbolic acid, the tincture of the perchloride of iron, tincture of iodine, the pernitrate of mercury, chromic acid, and the fuming nitric acid. A solution of nitrate of silver is also sometimes used, but I believe it to be inefficacious.

Carbolic acid is a mild, but not always a painless application; applied to the vaginal surface of the cervix it produces a very superficial slough, its effects passing off in twenty-four hours. Applied to the interior of the uterus its effects are equally superficial and transitory. It is therefore useful in cases where you desire to apply a mild, stimulating caustic; but it is not suitable when it is necessary to destroy the so-called granulations which in severe cases cover the vaginal

surface of the cervix and extend into its canal; nor where an unhealthy condition of the mucous membrane lining the body of the uterus, the result of chronic endometritis, exists—a

FIG. 34.



Playfair's Probes.*

condition which often gives rise to profuse menorrhagia. It is best applied by means of a flexible silver or copper probe, such as those suggested by Dr. Playfair (Fig. 34), round the end of which is wrapped a layer of cotton; this can be passed into the uterus to the desired depth. When carried beyond the os internum the carbolic acid sometimes causes pain, which, however, soon subsides. I generally introduce the probe twice, dipping it a second time in the solution before doing so, because the first application cauterizes the cervical canal only, but the second generally reaches the body.

The perchloride of iron is an admirable styptic, and, as such, should be used when it is desirable to check uterine hæmorrhage. You can apply it in the same manner as the carbolic acid; but it is generally better to saturate a small roll of cotton with the tincture (or, as being less irritating, with a saturated solution of the perchloride in glycerin). Pass this up through a speculum, and place it in contact with the os uteri, and then, outside this, another and larger pledget of cotton well soaked with glycerin. Both these should be removed within twelve hours of their application. I have seen a very deep slough produced in a case where the cotton,

* Made by Matthews Brothers, 27 Carey Street, London.

saturated with the perchloride, was accidentally left in the vagina for two days. When it is desirable to check hæmorrhage depending on a granular condition of the cervix, or the existence of cancerous ulcerations, the perchloride of iron is a very valuable agent. Iodine has been used for the same purpose; it will sometimes answer, but is less certain in its effects. The perntrate of mercury is a powerful and active caustic. It has been recommended by some practitioners as an application in cases of malignant disease. I never employ it, because I believe I have in nitric acid a caustic equally, if not more efficacious, and one, at the same time, much safer; for severe salivation has followed the use of the perntrate in persons susceptible to the peculiar action of mercury.

Chromic and nitric acid are nearly identical in their action. The former is, however, in my opinion, more uncertain in its effects; it is also more irritating. I therefore prefer the nitric acid. Its application causes very little, indeed, in general, no pain; produces but a superficial slough, and has a wonderful effect in bringing about a healthy condition of the mucous membrane lining the body and cervix uteri. It also, in many instances, exerts a directly sedative influence, allaying the severe pain and vesical irritation so constantly present in cases of endometritis.

No matter which of these fluid caustics you may select certain rules applicable to all should be borne in mind. In the first instance, local inflammation, indicated by tenderness of the uterus when touched, should, if present, be removed, or at least mitigated, by appropriate treatment before any of them be used. To effect this the cervix, if soft and engorged, should be punctured, or if enlarged and indurated, leeches.

When it is desirable to carry the application up to the fundus, this should, if possible, be done through a canula or tube, with the double object of preventing the agent selected

from being weakened by admixture with the secretions during its passage through the cervical canal and by contact with its walls, and also of protecting the healthy structures from the action of the caustic which may be employed. For it must be borne in mind that the mucous membrane lining the cavity of the uterus may be, and often is, diseased, while that lining the cervical canal is in a perfectly healthy condition. It is therefore all-important that the healthy structures should be protected from the action of the caustic.

With the view of effecting this object, I have devised an instrument of very simple construction. It consists of a short tube or canula, made of platinum, and of a curved stilette, fitting the canula accurately, which is fixed to a boxwood handle.

The easiest and most satisfactory method of using this instrument is by exposing the os uteri by means of a duck-bill speculum, and the cervix being fixed by a tenaculum, to introduce it into the uterus; but if you have not an assistant you will in general succeed in introducing it through a full-sized Fergusson's speculum. In either case, when this is effected the stilette is to be withdrawn, and the canula being held steady by means of a pair of long forceps, a copper, or better still, a platinum rod, round which a layer of cotton

FIG. 35.



Author's Canula for Intra-uterine Medication.*

wool has been carefully rolled, dipped in the agent selected, is to be passed through the canula up to the fundus.

* Manufactured by Fannin & Co., Grafton Street, Dublin.

There is seldom much difficulty experienced in introducing the canula, for generally in suitable cases the cervical canal is patulous. If this is not the case a single tent of sea-tangle introduced twelve hours before the application is made, will dilate the cervix sufficiently.

A twofold advantage is gained by employing a canula such as I have recommended in the treatment of intra-uterine disease. First, it enables you to convey the caustic up to the part to which you desire to apply it, without its being weakened by previous contact with the cervical canal. Secondly, it protects the latter from the action of the caustic, a matter sometimes of importance if, as is often the case, the canal is healthy. Should it be desirable to apply the caustic to the cervical canal, that can be done after the canula is withdrawn.

Now one word as to the details of this operation—if that be not too dignified a name for the proceeding—for you will fail in your attempt to carry out this method of cauterizing the interior of the uterus successfully unless you attend to various little points. The first is, that you take care to grasp firmly the little projecting ear of the canula with a pair of long forceps before you withdraw the stilette. If you do not do so, one of two things will happen; either the canula will slip out of the cervix, or, if the os be patulous, as is frequently the case, it will disappear *in toto* within the cervical canal. Doubtless it will soon reappear; but it is not then always easy to grasp it, and it will sometimes slip behind the speculum, or, if grasped, may be found full of mucus. By holding the canula firmly with the forceps these troubles will be avoided.

In order to remedy this objection to the use of the instrument, I have had a vulcanite canula manufactured for me by the same makers, to which a handle is attached, and which in this respect resembles that figured in Dr. Barnes's recently published work on the *Diseases of Women*, but differs in being fur-

nished with a stilette to facilitate introduction. It is, however, a clumsier instrument than the platinum one; but its price is not a third of the former.

Next, and even more important, is the fixing of the cotton firmly on the end of the probe. Draw out the cotton, moisten the tip of the rod, catch but a few fibres of the cotton at first, and roll the rest slowly and evenly on. This is better effected by rotating the rod than by rolling the cotton round it. If these directions be not attended to the cotton will wrinkle up as it passes through the canula and will render the passage of the rod impossible; or, if loosely put on may be left behind in the uterus when the rod is withdrawn. Neither of these accidents will ever occur if the directions I have given be followed.

These directions apply equally to all liquid caustics used for the purpose of intra-uterine medication, and the success of your treatment will depend very much on the dexterity with which you carry it out. If there be too much cotton rolled round the probe, or if it be too loosely rolled on, the rod will stick in the canula, and you will have to withdraw it and re-introduce it; or if you take up too much of the caustic on the cotton it will trickle down, and may cause a troublesome sore in the vagina; so that to carry out this method, simple though it be, skill is needed and must be acquired.

Of the solid caustics, the nitrate of silver and sulphate of zinc are the only ones I use. These can be inserted through the canula I have described; but better by means of Sir J. Simpson's portecaustique (Fig. 12, p. 88).

By using it you can dispense with the speculum. Ten grains of the nitrate of silver or of the sulphate of zinc, the latter in the form of "zinc points," as suggested by Dr. Braxton Hicks, may be introduced through it up to the fundus, and left there to dissolve. Either of these caustics so used is liable to cause

pain, seldom, however, severe in character ; this too can be, in some degree at least, averted by placing a pledget of cotton saturated with glycerin in the vagina. I use both these agents occasionally, but less frequently than formerly, for since I have devised the means of applying the nitric acid without previous dilatation to the interior of the uterus by means of the canula, the results have been so satisfactory that I now seldom resort to the use of the solid caustics.

Of the use of ointments I have no personal experience ; they are more difficult to apply than either the fluid or solid caustics named. Dr. Barnes, however, considers them to be often of great value in some cases.

It is occasionally advisable to destroy the tissues of the cervix to a greater depth than can be effected by means of nitric acid. For this purpose two agents are employed, namely, caustic potash, or potassa c. calce, and the actual cautery ; the former is eminently useful in those cases where the lips of the os uteri are in a state of granular erosion, and you have seen me use it with the very best results. As I have in a previous lecture (Lecture IX) explained the mode of applying it, I shall not dwell on it now further than to remind you that it must be used cautiously, and that the vagina must be protected from the action of the caustic by the insertion of a pledget of lint saturated with vinegar under the lower edge of the cervix.

The actual cautery is not much employed in this country, but in America its use is warmly advocated. Dr. Gaillard Thomas states that, according to his experience, "of all the means of counter-irritation for removing chronic parenchymatous congestion, and causing a diminution in the size of the uterus by stimulating absorption, this is the most efficient and least objectionable as to its consequences." He uses a small steel rod terminating in a disk not much larger than a split pea. This heated in a spirit-lamp he applies for ten or twenty sec-

onds to the cervix, so as to create a small slough, re-heating and re-applying the cautery so as to cauterize the cervix in two or three places, one at either side of the os uteri.

Dr. Getchell, of Philadelphia, also advocates the use of the actual cautery in cases in which the cervix uteri is hypertrophied and indurated ; but instead of a steel rod he employs charcoal sticks, made of nitrate of potash, twenty grains ; charcoal, seven drachms ; powdered acacia, one drachm ; and water sufficient to make into a paste. This paste is to be formed into sticks of any required diameter and length. Dr. Getchell uses them of about the diameter of the little finger ; the stick is to be held in the flame of a gas or spirit lamp for a few moments till converted into a live coal, and applied through a glass or wooden speculum. His directions are : "Take the caustic in the forceps and apply it about four or five lines from the os to the lip which is most hypertrophied. Now, if you make slight pressure for a few seconds you will destroy tissue over a space of about the size of a three-cent piece, and of about two lines in depth ; the pain is very slight. On withdrawing the cautery I sponge the part with cold water. I then introduce a pledget of lint saturated with glycerin, and keep the patient in bed for forty-eight hours." The actual cautery may be applied once a month. I have tried these methods frequently, and can bear testimony to their efficacy ; but I prefer Dr. Getchell's.

I shall now make a few observations, respecting those drugs which are most frequently employed in the treatment of uterine disease, premising that medicines have but little influence on the uterus, and that, therefore, it is not surprising they effect but comparatively little good in the chronic diseases of that organ. My own experience leads me to the conclusion that those which have any direct effect on the uterus do not exceed four or five in number. I have satisfied myself that ergot of rye,

sulphate of quinine, strychnia, and arsenic exert a direct action on the uterus. I am not satisfied that any other medicine does. I do not mean to say that other medicines are not of use in the treatment of uterine disease, but I believe that their action is only secondary. Thus, the administration of iron is often followed by marked benefit in many cases of old-standing uterine disease, but this improvement is only the result of improved general health.

Ergot is a drug which, though long known, has but recently been fully recognized. At first used only in labor with the view of stimulating the muscular fibres of the uterus and exciting them to increased action, it is now prescribed by physicians in cases of hæmorrhage from the lungs and other viscera, sometimes even with very good results in the hæmorrhage occurring from the bowels in typhoid fever; but it is specially indicated in nearly all the forms of uterine hæmorrhage. Astringents are, in my opinion, nearly valueless in such cases. There is hardly a case of uterine hæmorrhage or of menorrhagia, unconnected with malignant disease of the uterus, in which, from one cause or another, that organ is not enlarged, and its muscular tissue relaxed. Hence the value of ergot; it stimulates the muscular fibres of the uterus to contract, and thus checks the flow of blood. When administered for this purpose, ergot must be given in large doses and at short intervals. A drachm of the liquid extract, or an ounce of the infusion should be administered every third hour. In anæmic patients, the addition of ten drops of the tincture of the perchloride of iron to each dose greatly enhances the efficiency of the medicine. Ergot may also be administered in cases of menorrhagia in the form of powder; ten grains of it, directed to be taken at short intervals, being the ordinary dose.

One other mode of administering ergot deserves special notice. I allude to its hypodermic injection. It is thus em-

ployed by physicians in many cases in which hæmorrhage occurs, unconnected with uterine disease ; but it is specially useful in the treatment of menorrhagia depending on the presence of uterine fibroids. The recorded cases seem to prove that ergotin, that is the active principle of ergot, injected subcutaneously, not only arrests the profuse hæmorrhage which occurs in connection with these tumors, but has the effect of diminishing their volume. The drawback to using it subcutaneously is that it is liable if not carefully used to produce great irritation at the point where it is injected, the result frequently being the formation of troublesome though circumscribed abscesses. I generally inject ten to fifteen minims of the Ext. ergotæ liq., B. P., with equal parts of water daily. In carrying out this treatment, the needle should be made to penetrate deeply into the muscular structures, the safest site for the injections being the glutæus muscle.

Next to ergot, quinine is, perhaps, the most valuable agent at our disposal in the treatment of uterine hæmorrhage depending on a relaxed condition of the muscular tissue of the uterus, such as that which occurs in many cases of subinvolution. But you must give it in large doses ; five grains or upwards every four hours. I have also found quinine in full doses efficacious in cases of menorrhagia, where ergot has failed. Thus, I have at present under my care, a lady, whose uterus is the seat of a subperitoneal fibroid, and she suffers from profuse menstruation. I have tried with her in turn nearly every known remedy, and she finds greater benefit from quinine in seven-grain doses, with the addition of ten minims of the tincture of the perchloride of iron, than from any other drug. She is also one of those patients who has derived benefit from the use of the spinal hot-water bag. I do not rely as much on quinine in cases of menorrhagia as I do on ergot, but of this I am sat-

ified, that in some cases in which ergot produced no beneficial effects, the administration of quinine checked the hæmorrhage.

One other drug specially deserves notice with reference to its efficacy in certain forms of menorrhagia. I allude to arsenic. It seems, by diminishing the calibre of the capillary arteries, to check the exudation of blood from the inner surface of the uterus. I do not in general administer arsenic during a menstrual period, but direct it to be taken in the interval between the periods. I believe it to be of great use in those cases in which the excessive loss is met with in females of a leucophlegmatic temperament. Arsenic should be given after meals, in gradually increased doses of from three to ten drops of the liquor arsenicalis, B. P. It is best administered in combination with a bitter, such as the compound tincture of gentian, or, if that be objectionable, with the compound tincture of chloroform. In several cases I have found its efficacy increased by the addition of ten drops of the tincture of digitalis to each dose.

That strychnia exerts a direct action on the uterus is, to my mind, clearly established. Added to ergot in cases of parturition, it greatly increases the efficacy of the latter drug, being specially useful when *post-partum* hæmorrhage is anticipated. It appears to have the power of increasing the tonic contraction of the uterine fibres and of preventing their undue relaxation when the pain has subsided. Its use is contraindicated in all cases where any inflammatory condition of the uterus or ovary exists. Strychnia is also specially useful in many forms of amenorrhœa where it seems desirable to stimulate the uterus and ovaries, and in such cases it is often prescribed with advantage in combination with iron. It should be administered cautiously, commencing with two or three drops of the liquor, the doses to be gradually increased to eight, or even ten drops, three times a day. I have, however, known even small doses

Fifteen drops of this solution contain half a grain of the acetate of morphia, and $\frac{1}{40}$ th of a grain of sulphate of atropia.

Indian hemp is a useful drug, and is often administered with benefit in cases of painful menstruation. Its use seems to be specially indicated in those forms of dysmenorrhœa depending upon the presence of uterine fibroids, in which the pain experienced at the commencement of the menstrual periods is sometimes very severe. Most patients bear this drug well, and derive much benefit from its use. The dose is from one-half to a grain of the extract, or from ten to fifteen drops of the tincture, every fourth hour; but with some it disagrees, producing dizziness and nausea, and in such its use must be discontinued.

In some patients suffering from uterine disease, great irritability of the bowels is a prominent symptom; these patients are generally in a condition urgently demanding the exhibition of tonics, which, however, it is difficult to administer, as they often only increase the previously existing irritation of the gastro-intestinal mucous membrane. In such cases you will sometimes succeed by combining quinine with the carbonate of bismuth, administered in the form of powder; two grains of the former with eight or ten of the latter, to be taken before meals.

Most patients, however, laboring under uterine disease suffer from constipation of the bowels, which is a source of great discomfort to them, and is also a most troublesome symptom to treat; the action of any strong purgative increasing their sufferings at the time, while the dose must be repeated at short intervals, often too in augmented doses. In such cases enemata of cold water, taken regularly at the same hour daily, frequently answer the purpose of procuring a daily evacuation. Some patients cannot bear, however, the injection into the bowels of cold water; when this is the case it must be used tepid, but

its effects are then much less satisfactory. Over and over again patients have told me that enemata produced no effect; on inquiry I found they used warm water, and on inducing them to try the injection cold, have known satisfactory results obtained. But many patients cannot or will not submit to this treatment; then you may try a pill containing a quarter of a grain of the extract of belladonna, and four grains of the compound rhubarb pill, to be taken regularly each night; or, if iron be indicated, you may combine the extract of aloes with the sulphate of iron, in doses of from one-quarter of a grain to two grains of the former, with two grains of the latter, to be taken as a pill three times a day, before meals. Very often the smaller doses named will prove quite sufficient if taken regularly.

But the question of aperients is too extensive a subject for me to enter into at length. In conclusion, I shall only point out that in private practice the Pullna, Frederichshall, and Hunyadi Janos waters often agree very well. They should be taken before breakfast, and be warmed by adding a small quantity of hot water.



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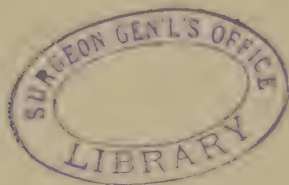
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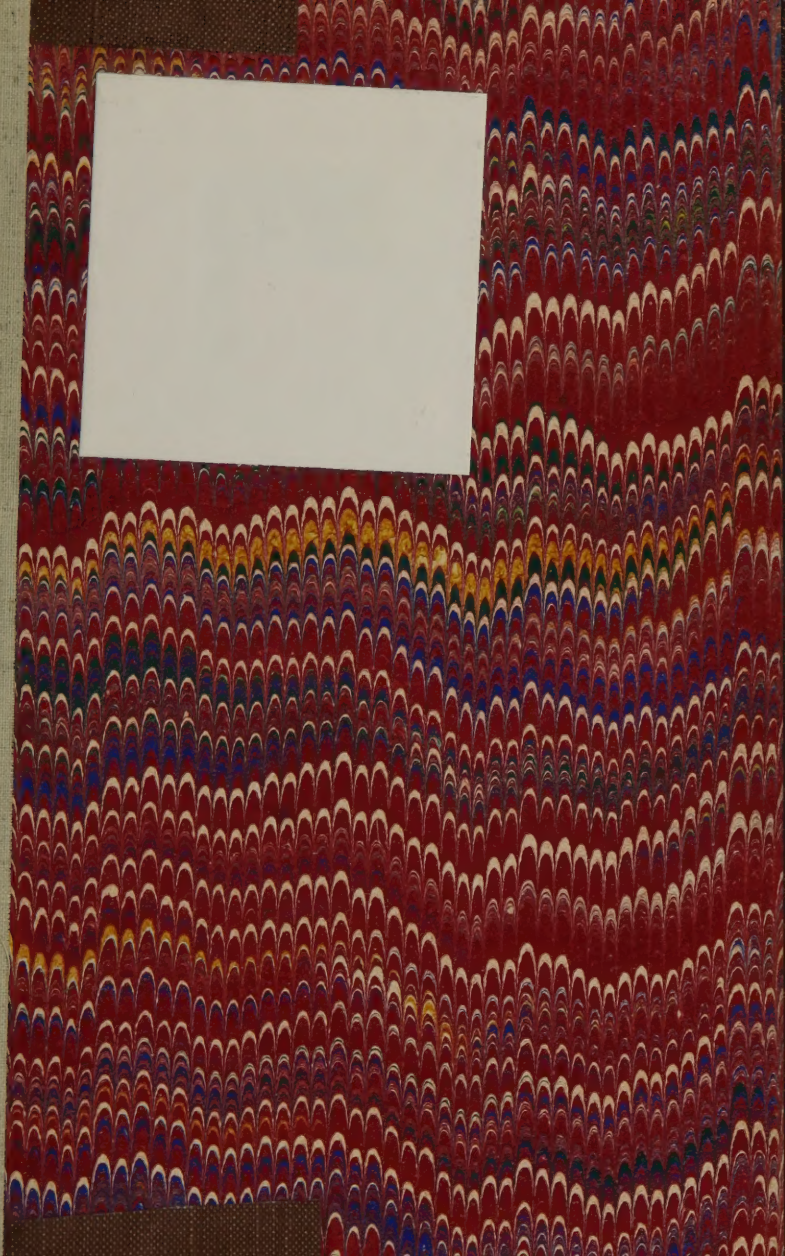
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